



Virginia Commonwealth University  
**VCU Scholars Compass**

---

VCU Bulletins

VCU University Archives

---

2016

## Virginia Commonwealth University Undergraduate Bulletin [2016]

Virginia Commonwealth University

Follow this and additional works at: <https://scholarscompass.vcu.edu/vcubulletins>

© Virginia Commonwealth University

---

### Downloaded from

<https://scholarscompass.vcu.edu/vcubulletins/176>

This Bulletin is brought to you for free and open access by the VCU University Archives at VCU Scholars Compass. It has been accepted for inclusion in VCU Bulletins by an authorized administrator of VCU Scholars Compass. For more information, please contact [libcompass@vcu.edu](mailto:libcompass@vcu.edu).



# 2016-17

## Undergraduate Bulletin

[bulletin.vcu.edu](http://bulletin.vcu.edu)

Virginia Commonwealth University is an equal opportunity, affirmative action university providing access to education and employment without regard to age, race, color, national origin, gender, religion, sexual orientation, veteran's status, political affiliation or disability.

*Archived August 24, 2016*



# VCU

VIRGINIA COMMONWEALTH UNIVERSITY

# TABLE OF CONTENTS

Undergraduate Bulletin .....	9	Pre-health and pre-law advising tracks .....	40
About VCU .....	10	Preparation for the study of dentistry .....	41
Administration .....	10	Preparation for the study of medicine .....	42
Accreditation .....	10	Preparation for the study of occupational therapy .....	43
Mission statement .....	10	Preparation for the study of pharmacy .....	45
Oak Ridge Associated Universities Consortium .....	11	Preparation for the study of physical therapy .....	46
VCU Health System Authority .....	11	Preparation for professional studies in veterinary medicine and optometry .....	48
Board of Visitors .....	11	Nondegree-seeking students .....	48
Determination of student classification for in-state tuition purposes .....	11	Advising after the first year .....	48
Rights of students under the Family Educational Rights and Privacy Act .....	12	Learning support .....	49
Consumer information .....	12	Academic regulations and general degree requirements .....	49
Undergraduate study .....	13	Advising program .....	49
Admission to the university .....	13	Current mailing address .....	49
Admission guidelines .....	13	Attendance regulations .....	50
International admissions .....	14	Student conduct in the classroom .....	50
Admission procedures .....	14	Classification of students .....	50
Freshman application deadlines .....	15	Categories of student enrollment .....	50
Admission notification .....	15	Nondegree-seeking student guidelines .....	51
Admission guidelines for transfer students .....	16	Registration policies .....	52
Transfer application deadlines .....	17	Degree options .....	54
Evaluation of transfer credit .....	17	Degree requirements for all undergraduate students .....	55
Additional sources of academic credit .....	18	General course information .....	56
Senior Citizens Higher Education Program .....	23	Grading and marking system .....	57
Enrichment and acceleration opportunities .....	24	Grade review procedure .....	59
Orientation .....	24	Transcripts .....	61
Readmission guidelines .....	24	Degree Works .....	61
The Honors College and guaranteed admission .....	26	Continuance in academic programs .....	61
Tuition, fees and expenses .....	26	Termination of enrollment .....	62
Financial aid .....	31	Graduation process .....	62
Academic advising .....	35	Awarding degrees posthumously .....	63
First-year students .....	35	Commencement participation policy .....	63
Undeclared students .....	35	Appeal to waive an academic regulation, Academic Regulations Appeals Committee .....	63
Transfer students .....	35	Consumer information .....	64
Pre-health majors .....	35	Contacts .....	64
Pre-health major in clinical laboratory sciences .....	36	Core curriculum .....	64
Pre-health major in clinical radiation sciences .....	37	Effective bulletin .....	66
Pre-health major in dental hygiene .....	38	Accelerated bachelor's-to-master's programs .....	66
Pre-health major in nursing .....	39	New students and family programs .....	66
		College of Humanities and Sciences .....	68
		Administration .....	68

Accreditation .....	68	Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.) with a concentration in health and science .....	110
Undergraduate information .....	68	Gender, sexuality and women's studies, minor in .....	113
Department of African American Studies .....	71	Department of History .....	113
African American Studies, Bachelor of Arts (B.A.) .....	71	History, Bachelor of Arts (B.A.) .....	113
African American Studies, Bachelor of Arts (B.A.) with a concentration in artistic, historical and literary perspectives .....	75	History, minor in .....	115
African American Studies, Bachelor of Arts (B.A.) with a concentration in political, religious and societal perspectives .....	77	Medical humanities, minor in .....	115
African American Studies, Bachelor of Arts (B.A.) with a concentration in social and behavioral perspectives .....	79	Department of Kinesiology and Health Sciences .....	116
African American studies, minor in .....	81	Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in exercise science .....	116
Department of Biology .....	81	Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in health science .....	118
Biology, Bachelor of Science (B.S.) .....	81	Health Sciences, Certificate in (Post-baccalaureate undergraduate certificate) .....	120
Biology, minor in .....	84	Department of Mathematics and Applied Mathematics .....	121
Department of Chemistry .....	85	Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in applied mathematics .....	122
Chemistry, Bachelor of Science (B.S.) with a concentration in biochemistry .....	85	Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in biomathematics .....	124
Chemistry, Bachelor of Science (B.S.) with a concentration in chemical modeling .....	87	Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in general mathematical sciences .....	126
Chemistry, Bachelor of Science (B.S.) with a concentration in chemical science .....	89	Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in mathematics .....	129
Chemistry, Bachelor of Science (B.S.) with a concentration in professional chemist .....	91	Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in secondary teacher preparation .....	131
Chemistry, Bachelor of Science (B.S.) with a concentration in professional chemist with honors .....	93	Mathematics, minor in .....	133
Chemistry, minor in .....	95	Department of Military Science and Leadership .....	133
Department of English .....	95	Department of Philosophy .....	134
English, Bachelor of Arts (B.A.) .....	96	Philosophy, Bachelor of Arts (B.A.) .....	134
American studies, minor in .....	98	Philosophy, Bachelor of Arts (B.A.) with a concentration in ethics and public policy .....	136
British studies, minor in .....	99	Philosophy, Bachelor of Arts (B.A.) with a concentration in philosophy and law .....	138
Creative writing, minor in .....	99	Philosophy, Bachelor of Arts (B.A.) with a concentration in philosophy and science .....	139
English, minor in .....	99	Philosophy, minor in .....	141
Writing, minor in .....	100	Philosophy of law, minor in .....	142
Department of Forensic Science .....	100	Department of Physics .....	142
Forensic Science, Bachelor of Science (B.S.) with a concentration in forensic biology .....	100	Physics, Bachelor of Science (B.S.) .....	142
Forensic Science, Bachelor of Science (B.S.) with a concentration in forensic chemistry .....	103	Accelerated Bachelor of Science (B.S.) in Physics and Master of Science (M.S.) in Physics and Applied Physics .....	144
Forensic Science, Bachelor of Science (B.S.) with a concentration in physical evidence .....	105	Physics, minor in .....	144
Department of Gender, Sexuality and Women's Studies .....	107	Department of Political Science .....	144
Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.) .....	107	Political Science, Bachelor of Arts (B.A.) with a concentration in civil rights .....	145



Political Science, Bachelor of Arts (B.A.) with a concentration in comparative politics .....	146	Economics Program .....	184
Political Science, Bachelor of Arts (B.A.) with a concentration in human security .....	148	Economics, Bachelor of Science (B.S.) [College of Humanities and Sciences] .....	184
Political Science, Bachelor of Arts (B.A.) with a concentration in international relations .....	150	Economics, minor in .....	186
Political Science, Bachelor of Arts (B.A.) with a concentration in political theory and methodology .....	152	Interdisciplinary Degree Program in Science .....	186
Political Science, Bachelor of Arts (B.A.) with a concentration in politics and government .....	153	Science, Bachelor of Science (B.S.) with a concentration in biology .....	186
Political Science, Bachelor of Arts (B.A.) with a concentration in public policy and administration .....	155	Science, Bachelor of Science (B.S.) with a concentration in chemistry .....	190
Political Science, Bachelor of Arts (B.A.) with a concentration in U.S. government .....	157	Science, Bachelor of Science (B.S.) with a concentration in physics .....	193
Accelerated Bachelor of Arts (B.A.) in Political Science and Master of Public Administration (M.P.A.) .....	159	Science, Bachelor of Science (B.S.) with a concentration in professional science .....	195
Nonprofit management and administration, minor in .....	159	Richard T. Robertson School of Media and Culture .....	200
Political science, minor in .....	160	Mass Communications, Bachelor of Science (B.S.) with a concentration in advertising/creative .....	201
Public management, minor in .....	160	Mass Communications, Bachelor of Science (B.S.) with a concentration in advertising/strategic .....	203
Department of Psychology .....	160	Mass Communications, Bachelor of Science (B.S.) with a concentration in journalism/broadcast .....	205
Psychology, Bachelor of Science (B.S.) .....	161	Mass Communications, Bachelor of Science (B.S.) with a concentration in journalism/print-online .....	207
Psychology, Bachelor of Science (B.S.) with a concentration in applied psychology .....	163	Mass Communications, Bachelor of Science (B.S.) with a concentration in public relations .....	209
Psychology, Bachelor of Science (B.S.) with a concentration in life science .....	165	Media studies, minor in .....	211
Psychology, Bachelor of Science (B.S.) with a concentration in pre-graduate school .....	167	School of World Studies .....	212
Psychology, Bachelor of Science (B.S.) with a concentration in urban psychology .....	169	Anthropology, Bachelor of Science (B.S.) .....	213
Psychology, minor in .....	171	Foreign Language, Bachelor of Arts (B.A.) with a concentration in French .....	216
Department of Statistical Sciences and Operations Research .....	172	Foreign Language, Bachelor of Arts (B.A.) with a concentration in German .....	218
Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in operations research .....	172	Foreign Language, Bachelor of Arts (B.A.) with a concentration in Spanish .....	221
Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in statistics .....	175	International Studies, Bachelor of Arts (B.A.) with a concentration in European studies .....	223
Statistics, Certificate in (Post-baccalaureate undergraduate certificate) .....	177	International Studies, Bachelor of Arts (B.A.) with a concentration in general studies .....	227
Statistics, minor in .....	178	International Studies, Bachelor of Arts (B.A.) with a concentration in international social justice studies .....	229
Department of Sociology .....	178	International Studies, Bachelor of Arts (B.A.) with a concentration in Latin American studies .....	233
Sociology, Bachelor of Science (B.S.) .....	178	International Studies, Bachelor of Arts (B.A.) with a concentration in world cinema .....	236
Accelerated Bachelor of Science (B.S.) and Master of Science (M.S.) in Sociology .....	180	Religious Studies, Bachelor of Arts (B.A.) .....	239
Sociology, minor in .....	180	International Management Studies, Certificate in (Undergraduate certificate) .....	241
Bachelor of Interdisciplinary Studies Program .....	181	Spanish/English Translation and Interpretation, Certificate in (Undergraduate certificate) .....	242
Interdisciplinary Studies, Bachelor of (B.I.S.) with a liberal studies for early and elementary education major [College of Humanities and Sciences] .....	181		

African studies, minor in .....	242	Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiography (degree completion) .....	267
Anthropology, minor in .....	243	Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiologist assistant (second modality) .....	268
Arabic and Middle Eastern studies, minor in .....	243	School of the Arts .....	271
Asian and Chinese studies, minor in .....	244	Administration .....	271
European studies, minor in .....	244	Accreditation .....	271
French, minor in .....	245	Programs .....	271
German, minor in .....	245	School of the Arts Visual Resource Center .....	272
International social justice studies, minor in .....	245	Undergraduate information .....	272
Italian studies, minor in .....	246	Advanced Media Production Technology, Certificate in (Post-baccalaureate undergraduate certificate) .....	273
Latin American studies, minor in .....	247	Art Foundation Program .....	274
Mediterranean studies, minor in .....	247	Cinema Program .....	274
Religious studies, minor in .....	248	Cinema, Bachelor of Arts (B.A.) .....	274
Russian studies, minor in .....	248	Department of Art Education .....	276
Spanish, minor in .....	248	Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in art education .....	276
World cinema, minor in .....	248	Department of Art History .....	279
School of Allied Health Professions .....	249	Art History, Bachelor of Arts (B.A.) with a concentration in architectural history .....	280
Administration .....	249	Art History, Bachelor of Arts (B.A.) with a concentration in art historical .....	282
Philosophy .....	249	Art history, minor in .....	284
Accreditation .....	249	Department of Communication Arts .....	284
Programs .....	250	Communication Arts, Bachelor of Fine Arts (B.F.A.) .....	284
Licensure/certification .....	250	Communication Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in scientific and preparatory medical illustration .....	286
Attendance regulations .....	250	Department of Craft and Material Studies .....	288
Student performance and behavior .....	250	Craft and Material Studies, Bachelor of Fine Arts (B.F.A.) .....	288
Financial aid .....	251	Craft and material studies, minor in .....	290
Undergraduate information .....	251	Department of Dance and Choreography .....	290
Department of Clinical Laboratory Sciences .....	251	Dance and Choreography, Bachelor of Fine Arts (B.F.A.) .....	291
Clinical Laboratory Sciences, Bachelor of Science (B.S.) .....	252	Dance and Choreography, Bachelor of Fine Arts (B.F.A.) with a concentration in performance/Richmond Ballet .....	293
Department of Radiation Sciences .....	254	Dance, minor in .....	295
Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology .....	254	Department of Fashion Design and Merchandising .....	296
Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology (degree completion) .....	257	Fashion, Bachelor of Arts (B.A.) with a concentration in fashion merchandising .....	296
Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology (second modality) .....	258	Fashion, Bachelor of Fine Arts (B.F.A.) with a concentration in fashion design .....	298
Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy .....	260	Department of Graphic Design .....	299
Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy (degree completion) .....	262	Graphic Design, Bachelor of Fine Arts (B.F.A.) .....	299
Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy (second modality) .....	263	Department of Interior Design .....	302
Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiography .....	265		

Interior Design, Bachelor of Fine Arts (B.F.A.) .....	302	Art History, Bachelor of Arts (B.A.) with a concentration in art historical .....	346
Department of Kinetic Imaging .....	305	Fashion, Bachelor of Fine Arts (B.F.A.) with a concentration in fashion design .....	348
Kinetic Imaging, Bachelor of Fine Arts (B.F.A.) .....	305	Graphic Design, Bachelor of Fine Arts (B.F.A.) .....	349
Department of Music .....	307	Interior Design, Bachelor of Fine Arts (B.F.A.) .....	351
Music, Bachelor of (B.M.) with a concentration in music education/instrumental .....	308	Painting and Printmaking, Bachelor of Fine Arts (B.F.A.) .....	353
Music, Bachelor of (B.M.) with a concentration in music education/vocal-choral .....	310	Islamic art history, minor in – VCUQatar Campus .....	355
Music, Bachelor of (B.M.) with a concentration in performance/guitar .....	312	Honors Program .....	355
Music, Bachelor of (B.M.) with a concentration in performance/jazz studies .....	314	School of Business .....	356
Music, Bachelor of (B.M.) with a concentration in performance/piano .....	316	Administration .....	356
Music, Bachelor of (B.M.) with a concentration in performance/strings .....	318	Accreditation .....	356
Music, Bachelor of (B.M.) with a concentration in performance/voice .....	320	Financial aid, scholarships and awards .....	356
Music, Bachelor of (B.M.) with a concentration in performance/winds and percussion .....	322	Undergraduate information .....	356
Music, Bachelor of Arts (B.A.) .....	324	Shared undergraduate business curriculum .....	357
Music, minor in .....	325	Business honors .....	360
Department of Painting and Printmaking .....	326	Post-baccalaureate undergraduate certificates .....	360
Painting and Printmaking, Bachelor of Fine Arts (B.F.A.) .....	326	Academic policies .....	361
Painting and printmaking, minor in .....	328	General business, minor in .....	363
Department of Photography and Film .....	328	Department of Accounting .....	363
Photography and Film, Bachelor of Fine Arts (B.F.A.) with a concentration in filmmaking .....	328	Accounting, Bachelor of Science (B.S.) .....	364
Photography and Film, Bachelor of Fine Arts (B.F.A.) with a concentration in photography .....	330	Accounting, Certificate in (Post-baccalaureate undergraduate certificate) .....	367
Department of Sculpture and Extended Media .....	331	Department of Economics .....	368
Sculpture, Bachelor of Fine Arts (B.F.A.) .....	332	Economics, Bachelor of Science (B.S.) [School of Business] .....	368
Sculpture, minor in .....	333	Department of Finance, Insurance and Real Estate .....	371
Department of Theatre .....	334	Business, Bachelor of Science (B.S.) with a concentration in finance .....	371
Theatre, Bachelor of Arts (B.A.) .....	334	Business, Bachelor of Science (B.S.) with a concentration in risk management and insurance/corporate .....	373
Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in costume design/technical production .....	336	Business, Bachelor of Science (B.S.) with a concentration in risk management and insurance/financial planning .....	376
Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in lighting design/technical production .....	337	Financial Technology, Bachelor of Science (B.S.) with a concentration in actuarial science .....	379
Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in performance .....	339	Financial Technology, Bachelor of Science (B.S.) with a concentration in financial engineering .....	381
Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in scene design/technical production .....	341	Real Estate, Bachelor of Science (B.S.) .....	383
Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in stage management/technical production .....	343	Department of Information Systems .....	386
School of the Arts in Qatar .....	345	Information Systems, Bachelor of Science (B.S.) .....	386
		Information Systems, Certificate in (Post-baccalaureate undergraduate certificate) .....	389
		Department of Management .....	390
		Business, Bachelor of Science (B.S.) with a concentration in human resource management .....	390

Business, Bachelor of Science (B.S.) with a concentration in management/business administration .....	393	Chemical and Life Science Engineering, Bachelor of Science (B.S.) with a concentration in chemical engineering .....	432
Business, Bachelor of Science (B.S.) with a concentration in management/entrepreneurship .....	395	Chemical and Life Science Engineering, Bachelor of Science (B.S.) with a concentration in life science engineering .....	434
Business, Bachelor of Science (B.S.) with a concentration in management/international management .....	398	Chemical and life science engineering, minor in .....	436
Human Resource Management, Certificate in (Post-baccalaureate undergraduate certificate) .....	400	Department of Computer Science .....	436
International Management Studies, Certificate in (Undergraduate certificate) .....	401	Computer Science, Bachelor of Science (B.S.) .....	436
Human resource management, minor in .....	402	Accelerated Bachelor of Science (B.S.) and Master of Science (M.S.) in Computer Science .....	438
Department of Marketing .....	402	Computer Science, Certificate in (Post-baccalaureate undergraduate certificate) .....	439
Marketing, Bachelor of Science (B.S.) with a concentration in general marketing .....	403	Computer science, minor in .....	439
Marketing, Bachelor of Science (B.S.) with a concentration in integrated marketing communications .....	405	Department of Electrical and Computer Engineering .....	440
Marketing, Bachelor of Science (B.S.) with a concentration in personal selling and business marketing .....	408	Computer Engineering, Bachelor of Science (B.S.) .....	440
Marketing, Bachelor of Science (B.S.) with a concentration in product and brand management .....	411	Electrical Engineering, Bachelor of Science (B.S.) .....	442
Department of Supply Chain Management and Analytics .....	414	Computer engineering, minor in .....	445
Business, Bachelor of Science (B.S.) with a concentration in supply chain management and analytics .....	414	Electrical engineering, minor in .....	445
School of Dentistry .....	417	Department of Mechanical and Nuclear Engineering .....	445
Administration .....	417	Mechanical Engineering, Bachelor of Science (B.S.) .....	446
Accreditation .....	417	Mechanical Engineering, Bachelor of Science (B.S.) with a concentration in nuclear engineering .....	448
Mission .....	417	Mechanical engineering, minor in .....	451
Dental Hygiene Program .....	417	L. Douglas Wilder School of Government and Public Affairs .....	452
Dental Hygiene, Bachelor of Science (B.S.) .....	419	Administration .....	452
School of Education .....	422	Accreditation .....	452
Administration .....	422	Program offerings .....	452
Accreditation .....	422	Service-learning and internship opportunities .....	453
Organization .....	422	Undergraduate information .....	453
Facilities .....	422	Criminal Justice, Bachelor of Science (B.S.) with a concentration in forensic crime scene investigation .....	455
Extended Teacher Preparation Program .....	422	Criminal Justice, Bachelor of Science (B.S.) with a concentration in justice .....	456
School of Engineering .....	426	Homeland Security and Emergency Preparedness, Bachelor of Arts (B.A.) .....	458
Administration .....	426	Urban and Regional Studies, Bachelor of Science (B.S.) .....	461
Accreditation .....	426	Urban and Regional Studies, Bachelor of Science (B.S.) with a concentration in regional analysis and development .....	463
Degree programs .....	426	Urban and Regional Studies, Bachelor of Science (B.S.) with a concentration in urban planning and policy .....	466
Undergraduate information .....	427	Criminal justice, minor in .....	468
Cooperative education program .....	427	Homeland security and emergency preparedness, minor in .....	468
Double major in engineering and physics .....	428	Urban and regional studies, minor in .....	469
Department of Biomedical Engineering .....	428	School of Medicine .....	470
Biomedical Engineering, Bachelor of Science (B.S.) .....	429	Administration .....	470
Department of Chemical and Life Science Engineering .....	431	Accreditation .....	470



Mission statement .....	471	Bioinformatics, Bachelor of Science (B.S.) with a concentration in computational .....	493
Faculty and facilities .....	471	Bioinformatics, Bachelor of Science (B.S.) with a concentration in quantitative/statistical .....	496
School of Nursing .....	472	Sustainable Innovation, Certificate in (Undergraduate certificate) .....	498
Administration .....	472	University College .....	499
Accreditation .....	472	Focused Inquiry .....	499
Programs .....	472	Interdisciplinary Studies, Bachelor of (B.I.S.) [University College] .....	500
Facilities and resources .....	472	Living-learning community programs .....	501
Financial assistance .....	472	VCU Leaders Engaging in Advanced Discovery living-learning program .....	501
Departments .....	472	da Vinci Center for Innovation .....	503
Undergraduate information .....	472	Product Innovation, Certificate in (Undergraduate certificate) .....	503
Nursing, Bachelor of Science (B.S.), accelerated program .....	473	Venture Creation, Certificate in (Undergraduate certificate) .....	505
Nursing, Bachelor of Science (B.S.), R.N.-B.S. completion program .....	475	Office of Research and Innovation .....	507
Nursing, Bachelor of Science (B.S.), traditional program .....	476	Center for Clinical and Translational Research .....	507
School of Pharmacy .....	479	Graduate School .....	508
Administration .....	479	Division of Community Engagement .....	509
Statement of purpose .....	479	VCU ASPIRE .....	509
Mission statement .....	479	Division of Strategic Enrollment Management .....	512
Philosophy .....	480	Division of Student Affairs .....	513
Facilities .....	480	Division of Student Affairs courses .....	514
School of Social Work .....	481	Global Education Office .....	515
Administration .....	481	Education Abroad .....	515
Accreditation .....	481	English Language Program .....	516
Financial assistance .....	481	Global Outreach .....	516
Continuing education .....	482	International Student and Scholar Programs .....	516
Associations and student interest groups .....	482	VCU Globe .....	516
B.S.W. Program .....	482	The Honors College .....	519
Social welfare, minor in .....	482	Admissions to the Honors College .....	520
Social Work, Bachelor of (B.S.W.) .....	483	Guaranteed Admission Program .....	520
VCU Life Sciences .....	487	Office of Continuing and Professional Education .....	521
Administration .....	487	Undergraduate courses .....	522
Undergraduate information .....	487	Index .....	715
Center for Environmental Studies .....	487		
Environmental Studies, Bachelor of Science (B.S.) .....	488		
Accelerated Bachelor of Science (B.S.) and Master of Environmental Studies (M. Envs.) .....	489		
Environmental Studies, Certificate in (Post-baccalaureate undergraduate certificate) .....	490		
Environmental studies, minor in .....	490		
Center for the Study of Biological Complexity .....	490		
Bioinformatics, accelerated bachelor's to master's .....	491		
Bioinformatics, Bachelor of Science (B.S.) with a concentration in biological/genomic .....	491		

# UNDERGRADUATE BULLETIN

---

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

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 the state, educating the current and future work force, 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 \$270.3 million in externally funded research awards for the 2015 fiscal year, VCU is one of only 28 public universities in the country with an academic medical center to be designated as a research university with very high research activity as well as a Community Engaged Institution, both by the Carnegie Foundation. 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 31,000 students in 225 degree and certificate programs in the arts, sciences and humanities. Seventy-nine of the programs are unique in Virginia, many of them crossing the disciplines of VCU's 13 schools and one college. VCU has a full-time instructional faculty of more than 2,200 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 21,000 employees, VCU and the VCU Health System also have a significant impact on Central Virginia's economy.

Building on the foundation of VCU's nationally ranked academic programs and academic medical center, research and scholarly productivity, and engagement with the communities it serves, the university's strategic plan, Quest for Distinction, launches a new vision for VCU: to elevate its stature and become the nation's top urban, public research university. This focused plan capitalizes on the outstanding assets of the VCU experience and truly distinguishes VCU as a major research university committed to academic quality and student success at all levels.

Quest for Distinction also embodies VCU's commitment to human health through the VCU Medical Center, which includes the university's health sciences schools and offers state-of-the-art care in more than 200 specialty areas, many of national and international note, including organ transplantation, head and spinal cord trauma, burn healing and cancer treatment.

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 focused on student learning.

## 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 Commission on Colleges of the Southern Association of Colleges and Schools to award baccalaureate, master's, doctoral and first professional degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097; telephone: (404) 679-4500. Note: The Commission is to be contacted **only** if there is evidence that appears to support an institution's significant noncompliance with a requirement or standard.

## 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

As the premier urban, public research university in Virginia, VCU's mission is to advance knowledge and student success through its commitments to:

- An engaged, learner-centered environment that fosters inquiry, discovery and innovation in a global setting
- Research that expands the boundaries of new knowledge and creative expression and promotes translational applications to improve human health
- Interdisciplinary collaborations that bring new perspectives to complex problems and mobilize creative energies that advance innovation and solve global challenges
- Health care that strives to preserve and restore health for all people, to seek the cause and cure of diseases through groundbreaking research, and to educate those who serve humanity

- Diversity that provides a climate of inclusion, a dedication to addressing disparities wherever they exist, and an opportunity to explore and create in an environment of trust
- Sustainable, university-community partnerships that enhance the educational, economic and cultural vitality of the communities VCU serves in Virginia and around the world

## Vision statement

VCU will be a premier urban, public research university distinguished by its commitment to:

- The intellectual and academic success of a diverse student body
- Research and discovery that advances knowledge, inspires creativity and improves human health
- The global engagement of students, faculty and staff that transforms lives and communities

## Core values

1. **Accountability** – committing to the efficient and transparent stewardship of our resources to achieve institutional excellence
2. **Achievement** – ensuring distinction in learning, research and scholarly pursuits, service, and patient care
3. **Collaboration** – fostering collegiality and cooperation to advance learning, entrepreneurship and inquiry
4. **Freedom** – striving for intellectual truth with responsibility and civility, respecting the dignity of all individuals
5. **Innovation** – cultivating discovery, creativity, originality, inventiveness and talent
6. **Service** – engaging in the application of learning and discovery to improve the human condition and support the public good at home and abroad
7. **Diversity** – ensuring a climate of trust, honesty and integrity where all people are valued and differences are recognized as an asset
8. **Integrity** – adhering to the highest standards of honesty, respect and professional and scholarly ethics

## Oak Ridge Associated Universities Consortium

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

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

For more information about ORAU and its programs, contact:

- Francis L. Macrina, Ph.D., ORAU Councilor for VCU  
(804) 827-2262
- Monnie E. Champion, ORAU Corporate Secretary

(865) 576-2206

Or you may visit the ORAU website at [orau.org](http://www.orau.org) (<http://www.orau.org>).

## VCU Health System Authority

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

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

## Board of Visitors

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

## Determination of student classification for in-state tuition purposes

Tuition is determined by the number of credit hours a student is taking, the student's residency classification, course of study and classification level. For in-state tuition benefits, the student must comply with Section 23-7.4 of the Code of Virginia (<http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+23-7.4>).

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

New and continuing students initially classified as non-Virginians for tuition purposes may request a review of the initial residency determination by completing an Application for Change of Domicile available from the Office of Records and Registration (online). The student must present clear and convincing evidence that he or she is 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 his/her residency classification prior to the start of classes for the semester under consideration. In accordance with the Code of Virginia, applications received after the deadline must be considered for the next semester. Submit completed applications with documentation to the university residency appeals officer. Processing may require four to

six weeks; therefore it is strongly recommended that applications be submitted earlier than the stated deadline.

Our 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. We provide information about the steps of our process and access to the applicable sections of the statute and the associated guidelines. We provide qualified staff to review the appeals and make decisions based on the information students provide. What we cannot do is provide advisement to students as to how to present their case for review; we cannot become the student's advocate since we must make the decision.

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

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

## **Rights of students under the Family Educational Rights and Privacy Act**

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

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

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

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

## **Parental Notification Amendment**

Amendments to FERPA signed into federal law in fall 1998 specifically allow notification to the parents or guardians of students under the age of 21 who violate any law or university rule regarding use or possession

of alcohol or other controlled substance. The Virginia Attorney General's Task Force on Drinking by College Students also recommended such notification in its 1998 report.

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

## **Consumer information**

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



# UNDERGRADUATE STUDY

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

## Admission to the university

Office of Admissions  
821 West Franklin Street  
P.O. Box 842526  
Richmond, Virginia 23284-2526  
Phone: (800) 841-3638, (804) 828-1222  
Fax: (804) 828-1899  
Email: [ugrad@vcu.edu](mailto:ugrad@vcu.edu)  
[admissions.vcu.edu](http://admissions.vcu.edu) (<http://www.admissions.vcu.edu>)  
**Sybil Halloran, Ph.D.**, associate vice provost

VCU Welcome Center  
West Broad Street Parking Deck  
1111 West Broad Street  
Richmond, Virginia 23284-2526  
Phone: (804) 827-2000  
[ugrad.vcu.edu/experience/visit](http://ugrad.vcu.edu/experience/visit) (<http://ugrad.vcu.edu/experience/visit>)

Office of Records and Registration  
Harris Hall  
1015 Floyd Ave.  
P.O. Box 842520  
Richmond, Virginia 23284-2520  
Phone: (804) 828-1341, (804) 828-1349  
Fax: (804) 828-2573  
Email: [rar@vcu.edu](mailto:rar@vcu.edu)  
[rar.vcu.edu](http://rar.vcu.edu) (<http://rar.vcu.edu>)  
**Bernard Hamm**, university registrar

## General policy governing admission and enrollment

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

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

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

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

## Admission guidelines

The credentials of undergraduate applicants for admission to degree status are reviewed on an individual basis. Because the number of applicants who meet the requirements for admission may exceed the number that can be admitted, the university selects those candidates who present the strongest qualifications in scholastic achievement and potential as reflected on transcripts and test scores. Applicants interested in enrolling as nondegree-seeking students should read the Nondegree-seeking student guidelines section, which appears in the "Academic Regulations and General Degree Requirements" section of this bulletin.

### Freshman undergraduate admission guidelines

An applicant for degree status must be a graduate of an accredited secondary school (or its equivalent) or hold a GED certificate with adequate scores, defined as a composite score of at least 550 on the GED battery. A high school student should submit an application for admission after completion of the junior year, unless applying for the Early Admission or Advanced Scholar programs, in which case the application should be submitted after the sophomore year.

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

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

at least three units in a modern or ancient language or two units of two foreign languages.

In addition, preference is given to candidates who submit the Advanced Studies Diploma or its equivalent. This diploma requires four units in English; four in social sciences, including U.S. and Virginia history, U.S. and Virginia government, and two courses in either world history or geography or both; four units in mathematics (algebra I, geometry and algebra II); four units in science drawn from earth science, biology, chemistry, physics or other advanced science courses; and either three units of one foreign language or two units of two foreign languages; two units in health and physical education; one unit of fine arts or practical arts; and one unit in economics and personal finance.

Freshman applicants planning to pursue postgraduate studies in the health professions (dentistry, medicine, occupational therapy, pharmacy and physical therapy) are advised to choose a pre-health advising track in addition to their academic major. For more information about professional health advising tracks, please visit [academicadvising.vcu.edu/prehealth/graduate.html](http://academicadvising.vcu.edu/prehealth/graduate.html) (<http://academicadvising.vcu.edu/prehealth/graduate.html>).

The Honors College offers qualified students interested in health science the opportunity for early acceptance into many of the MCV Campus programs. See the Honors College section of the Bulletin for details.

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

## Nondegree-seeking student guidelines

Eligibility guidelines for nondegree-seeking students may be found in the "Academic Regulations and General Degree Requirements" section of this bulletin.

## School of the Arts freshman admission guidelines

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

## International admissions

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

As required by U.S. regulations and by VCU admission policies, nonimmigrant applicants must demonstrate satisfactory academic achievement, adequate English proficiency and the ability to finance all educational and living expenses. Applicants can refer to the freshman admission guidelines (p. 13), transfer admission guidelines (p. 16) and admission procedures (p. 14) elsewhere in this section for specific requirements.

## Admission procedures

It is the responsibility of the applicant to ensure that all required admission documents are forwarded to the Office of Admissions before the deadline. (Refer to the freshman application deadlines or transfer application deadlines.)

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

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

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

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

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

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

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

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

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

#### 4. Test scores.

- a. Freshman applicants (high school graduates and GED holders) 22 years of age or younger must submit SAT or ACT scores and, if applicable, an official copy of their GED scores. Electronic submission is preferred.
  - i **Score optional review**  
Excluding the exceptions noted below, freshman applicants with a minimum high school GPA of 3.3 may request that their application be reviewed without submitting standardized test scores. Applicants should request to be considered for admission to the university without test scores on the application for freshman admission.
  - ii **Exceptions to score optional review**  
SAT or ACT scores will be required for freshman applicants who wish to be considered for VCU's merit-based scholarships (the Presidential, Provost and Deans' scholarships); students applying to the VCU Honors College and the School of Engineering; home-schooled students; and non-native English speakers. Applicants in these categories may not request the score optional review.
- b. Transfer applicants 22 years of age or younger and with fewer than 30 semester/45 quarter credits of college work must submit SAT or ACT scores.
- c. School of Nursing applicants, except those applying to the R.N.-B.S. program, must submit SAT, ACT or GRE scores regardless of age.
- d. Applicants whose native language is one other than English must submit scores for the Test of English as a Foreign Language, in addition to any other test scores required. In general, VCU requires a minimum score of 550 on the paper TOEFL, 213 on the computer TOEFL or 80 on the Web-based TOEFL, but some programs may require a higher TOEFL score. Some MCV Campus programs also may require Test of Written English or Test of Spoken English scores.

5. **Supplemental application requirements.** School of the Arts applicants must submit supplemental materials as described online at [vcu.edu/arts/apply](http://www.vcu.edu/arts/apply) (<http://www.vcu.edu/arts/apply>).

Applicants to all undergraduate programs on the MCV Campus must submit supplemental application materials as described online at [ugrad.vcu.edu/apply/apply\\_mcvcampus.html](http://ugrad.vcu.edu/apply/apply_mcvcampus.html) ([http://www.ugrad.vcu.edu/apply/apply\\_mcvcampus.html](http://www.ugrad.vcu.edu/apply/apply_mcvcampus.html)).

## Freshman application deadlines

Program-specific application deadlines for freshmen are available on the Office of Admissions website at [ugrad.vcu.edu/apply/freshman/deadlines.html](http://ugrad.vcu.edu/apply/freshman/deadlines.html) (<http://ugrad.vcu.edu/apply/freshman/deadlines.html>).

## Admission notification

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

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

When an applicant is tentatively accepted to the university, a final transcript is required to complete the individual's admission file. If the official transcript is not received by the end of the fourth week of classes of the semester for which the student was accepted, an administrative hold will be placed on future registrations until the credentials are received establishing the student's eligibility.

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

## Responding to the offer of admission

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

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

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

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

Students who defer their acceptance to a later semester forfeit their initial tuition deposit and must submit a second deposit for the semester in which they choose to enroll.

## Admission guidelines for transfer students

Transfer applicants are considered for admission provided they present evidence of good standing at the last institution attended; and to be competitive they should present a minimum cumulative GPA of 2.5 from all accredited institutions to be considered for admission to VCU. Priority application review will be given to applicants who have completed at least 30 credits at their former institution(s). Candidates with fewer than 30 semester (45 quarter) hours also will be reviewed on the basis of their high school performance and SAT/ACT scores (if younger than the age of 22). Transfer candidates who have earned fewer than 30 semester credits/45 quarter credits and who are 21 years of age or younger must submit SAT or ACT results and also must meet specific guidelines listed in the Freshman undergraduate admission guidelines section of this chapter. The undeclared major is not open to students with 60 or more college credits. Transfer applicants will be notified of an admissions decision on a rolling basis until the class is filled. Priority application review will be given to students who apply and submit all required documentation by the recommended application deadline.

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

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

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

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

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

### University undergraduate transfer policy

All credits taken at regionally accredited institutions that meet the VCU transfer requirements may be posted to the VCU transcript. However, there may be a difference between the credits VCU will post and the credits each VCU department/school will apply to the desired degree program. Students should meet with their program advisers, who will assist them in determining their VCU degree requirements and will advise them on what transfer courses the program specifically will apply toward their degree requirements. Regardless of how many transfer credits are accepted, students must satisfy all VCU graduation requirements noted in the graduation checklist (p. 62), including the following:

- Completion of at least 25 percent of the semester-hour credits required for their bachelor's degree program at VCU
- Completion of at least 30 of the last 45 semester-hour credits required for their bachelor's degree program at VCU

### State policy on transfer agreement

VCU welcomes applications from Virginia community colleges and Richard Bland students who have earned the Associate in Arts, Associate in Science or Associate in Arts and Science degrees, or approved

A.A.&S. or A.S. programs in general studies (see number 8). Students holding these degrees will have junior standing and, as long as they have earned a minimum grade of C in all the transferable courses, will be considered to have met all lower-division general education requirements for Monroe Park Campus programs with the exception of certain lower-level and upper-level program requirements that also apply to native students. (See below for more information about requirements for all students.) Students should closely follow the detailed course suggestions offered on the Transfer Center (<http://www.transfer.vcu.edu/vccs>) website for Virginia Community Colleges and Richard Bland College. By selecting certain courses to fulfill requirements within the three associate degree programs, additional lower-division courses needed after transfer to VCU can be held to a minimum. Additional information about VCU's guaranteed admission agreements (<http://www.ugrad.vcu.edu/apply/transfer/agreements.html>) with Virginia community colleges and Richard Bland College, including detailed eligibility requirements is available on the Undergraduate Admissions website.

Additionally:

- Students must make proper application for admission to VCU.
- Only courses with grades of C or higher are transferable.
- Credits needed to meet major prerequisites will be based on the Course Equivalency Tables (<http://www.transfer.vcu.edu/vccs/course-equivalency.aspx>) or agreements resulting from program-to-program transfer agreements. (See the list of agreements (<http://www.ugrad.vcu.edu/apply/transfer/agreements.html>).)
- Students will not be required to repeat courses that have been satisfactorily completed at a Virginia community college except in cases where special restrictions apply to all students.
- Applicants to degree programs that are competitive are not guaranteed admission but will be evaluated on the same basis as native students.

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

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

1. **Writing requirements:** The core education program writing requirement at VCU includes UNIV 111, UNIV 112 and UNIV 200. Students who successfully complete ENG 111 and ENG 112 at the community college with a minimum grade of C in both classes have fulfilled all core education program writing requirements (UNIV 111, UNIV 112 and UNIV 200) at VCU.

For associate degree holders, completion of ENGL 101 and ENGL 102 at RBC with a minimum grade of C in both classes will fulfill the UNIV 111, UNIV 112 and UNIV 200 requirement. For RBC students who transfer without an associate degree, ENGL 101 at RBC=UNIV 112 at VCU; ENGL 102 at RBC=ENGL 215 at VCU; and ENGL 200 at RBC=UNIV 200 at VCU.

2. All bachelor's degree programs in the College of Humanities and Sciences, School of Social Work and VCU Life Sciences require competency through the elementary level of a foreign language; some majors require competency through the intermediate level.



3. Mathematics/statistics: All bachelor's degree programs in the College of Humanities and Sciences have mathematics/statistics requirements that must be met. See specific program for required courses and their equivalents.
4. The School of Social Work requires a 2.5 GPA for admission to upper-level courses. The School of Business requires a minimum GPA for admission to upper-level course work. Please contact the Office of Undergraduate Studies in the School of Business for the current minimum GPA required. The School of Mass Communications requires a 2.5 GPA for admission to upper-level work. For students pursuing careers in early or secondary education through the Extended Teacher Preparation Program of the College of Humanities and Sciences and the School of Education, a 2.8 GPA and successful completion of the Praxis I examination are required for entry into Teacher Preparation, a stage in the program after the student has completed at least 60 credits. For students applying to majors in the School of the Arts, a portfolio evaluation for visual arts applicants and an audition for performance applicants are required.
5. The professional baccalaureate programs within the schools of Social Work, Nursing and Allied Health Professions, the Dental Hygiene Program in the School of Dentistry, and the doctoral programs in physical therapy and pharmacy have specific program-related lower-level requirements that must be completed to apply to and enter health sciences programs and to achieve success in the programs, if admitted.  
  
The health, physical education and exercise science programs have specific lower-level requirements related to state-approved program status, professional certification and entry into the practicum sequence. Specified science courses are prerequisite for entry into upper-level kinesiology and exercise science courses.
6. Transfer work from some occupational or technical programs is reviewed under specific conditions for the Bachelor of Interdisciplinary Studies program and the special program in nursing for community college R.N.-degree holders who wish to complete the Bachelor of Science in Nursing.
7. Students wishing to transfer to the School of Engineering must have a 3.0 GPA with no grades below a C. Also, B grades or better must be attained in mathematics, science or engineering courses to be considered for transfer. Transfer students from the VCCS will follow the admission agreement for engineering ([http://www.ugrad.vcu.edu/pdfs/GAA\\_Engineering\\_VCCS.pdf](http://www.ugrad.vcu.edu/pdfs/GAA_Engineering_VCCS.pdf)).
8. The A.A.&S. and A.S. programs in general studies are considered transfer degrees by VCU.
9. Senior capstone experience: All bachelor's degree programs require the completion of a senior capstone experience within the major as part of the VCU core curriculum.
10. Detailed information about the Virginia Community College/VCU and Richard Bland College/VCU transfer-equivalent courses (<http://www.transfer.vcu.edu/vccs/course-equivalency.aspx>) is available on the Web.

## Virginia Commonwealth University/Virginia Community College System Guaranteed Admission Agreement with Teacher Education Provision Admission

The VCU Pre-teacher GAA in the area of an arts and sciences core leads to a transferable associate degree (A.A.&S., A.A. or A.S.) that will facilitate entry into a PK-6 teacher education program. In addition, a student must earn at least a 2.8 GPA at VCU and have passed Praxis I before formal admission to the teacher preparation program. Additional

information about this agreement ([http://www.ugrad.vcu.edu/pdfs/PreTeacherEducation\\_agreement.pdf](http://www.ugrad.vcu.edu/pdfs/PreTeacherEducation_agreement.pdf)) is available on the Undergraduate Admissions website.

## Transfer application deadlines

Program-specific application deadlines for transfer students are available on the Office of Admissions website at [ugrad.vcu.edu/apply/transfer/deadlines.html](http://ugrad.vcu.edu/apply/transfer/deadlines.html) (<http://www.ugrad.vcu.edu/apply/transfer/deadlines.html>).

## Evaluation of transfer credit

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

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

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

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

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

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

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

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



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

## Additional sources of academic credit

Before the end of the first semester of enrollment, dual-enrollment or military service transcripts and scores for the Advanced Placement test of the College Entrance Examination Board, International Baccalaureate Diploma, Cambridge International Examination or College Level Examination Program are required to be submitted to the VCU Transfer Center to be eligible for academic credit.

**Note: The Virginia Commonwealth University Board of Visitors gives the University Undergraduate Curriculum Committee the authority to review these sources of academic credit as needed. The UUCC will report substantial changes to the board for further approval.**

### Credit for Advanced Placement tests of the College Entrance Examination Board

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

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

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

#### **Credit for Advanced Placement Tests of the College Entrance Examination Board**

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

Chemistry	3,4	CHEM 101, CHEZ 101	4
Chemistry	5	CHEM 101, CHEZ 101, CHEM 102, CHEZ 102	8
Chinese	3	FRLG 101	4
Chinese	4,5	CHIN 201, CHIN 202	6
Computer Science A	4,5	CMSC 255	4
Computer Science AB	3	CMSC 255	4
Computer Science AB	4,5	CMSC 255, CMSC 256	7
Economics – Macro	4,5	ECON 211	3
Economics – Micro	4,5	ECON 210	3
English Language 3,4,5 and Composition or English Literature and Composition		UNIV 111	3
English Language 3,4,5 and Composition and English Literature and Composition		UNIV 111, ENGL 215	6
Environmental Science	3,4	BIOL 103	4
Environmental Science	5	BIOL 103	5
European History	3,4,5	HIST 101, HIST 102	6
French, German, Spanish Language	3	FREN 202, GRMN 202, SPAN 202	3
French, German, Spanish Language	4	FREN 300, GRMN 300, SPAN 300	3
French, German, Spanish Language	5	FREN 300, GRMN 300, SPAN 300, FREN 301, GRMN 301, SPAN 301	6
French, German, Spanish Literature	3	FREN 202, GRMN 202, SPAN 202	3
French, German, Spanish Literature	4	FREN 330, GRMN 330, SPAN 330	3
French, German, Spanish Literature	5	FREN 330, GRMN 330, SPAN 330, FREN 331, GRMN 331, SPAN 331	6

Govt. & Politics: Comparative	3,4,5	POLI 109	3
Govt. & Politics: United States	3,4,5	POLI 103	3
Human Geography	3,4,5	URSP 102	3
Italian	3	ITAL 102	4
Italian	4	ITAL 201, ITAL 202	6
Italian	5	ITAL 202, ITAL 3XX	6
Japanese	3	FRLG 101	4
Japanese	4,5	FRLG 201, FRLG 202	6
Latin Literature	3,4,5	LATN 201	3
Latin: Vergil	3,4,5	LATN 202	3
Music Theory	3,4,5	MHIS 110	3
Physics 1	4,5	PHYS 201	4
Physics 2	4,5	PHYS 202	4
Physics C – Electricity & Magnetism	4,5	PHYS 208	5
Physics C – Mechanics	3,4,5	PHYS 207	5
Psychology	3,4,5	PSYC 101	4
Statistics	3,4	STAT 210	3
Statistics	5	STAT 212	3
U.S. History	3,4,5	HIST 103, HIST 104	6
World History	3,4,5	History elective	6

## Credit for International Baccalaureate Diplomas and courses

IB Higher Level (HL) tests passed with scores of 3-7 and Standard Level (SL) tests passed with scores of 4-7 will, depending on the test, be considered for advanced standing and credit for the corresponding courses at Virginia Commonwealth University. The chart below provides information about the VCU equivalent credit for IB scores. Three elective credits will be awarded for the “Theory of Knowledge” course.

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

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

### Credit for International Baccalaureate Diplomas and courses

IB examination	HL	SL	VCU equivalent	VCU credit
Biology	4,5	5,6	BIOL 101, BIOZ 101	4
Biology	6	7	BIOL 152, BIOZ 152	4

Biology	7		BIOL 151, BIOZ 151, BIOZ 152, BIOZ 152	8
Business & Management	4,5	5,6	BUSN 201	3
Business & Management	6,7	7	BUSN 201, BUSN 202	6
Chemistry	5	6	CHEM 101, CHEZ 101	4
Chemistry	6,7	7	CHEM 101, CHEZ 101, CHEM 102, CHEZ 102	8
Computer Science	4,5	5,6	CMSC 255	4
Computer Science	6,7	7	CMSC 255, CMSC 256	7
Economics	6,7	7	ECON 203	3
English A	4,5,6,7	5,6,7	UNIV 111	3
English B	4,5,6,7	5,6,7	UNIV 111	3
Environmental Systems		5,6,7	URSP 203, URSZ 203	4
French, German, Spanish		4	FREN 102, GRMN 102, SPAN 102	4
French, German, Spanish	4	5	FREN 202, GRMN 202, SPAN 202	3
French, German, Spanish	5	6	FREN 300, GRMN 300, SPAN 300	3
French, German, Spanish	6,7	7	FREN 300, GRMN 300, SPAN 300, FREN 301, GRMN 301, SPAN 301	6
Further Mathematics		4,5,6,7	MATH 141	3
Further Mathematics	5,6		MATH 200, MATH 201	8
Further Mathematics	7		MATH 200, MATH 201, MATH 310	11
Geography	4,5,6,7	5,6,7	URSP 102	3
History	4,5,6,7	5,6,7	History elective	6
History Americas	4,5,6,7	5,6,7	HIST 103, HIST 104	6
History Asia & Oceania	4,5,6,7	5,6,7	HIST 107, HIST 108	6
History Europe	4,5,6,7	5,6,7	HIST 101, HIST 102	6
ITGS			none	0
Latin	3	4	LATN 101	4
Latin	4	5	LATN 102	4

Latin	5,6,7	6,7	LATN 202	3
Mathematics		5,6,7	MATH 151	4
Mathematics	5,6		MATH 200	4
Mathematics	7		MATH 200, MATH 201	8
Mathematical Studies		4,5,6,7	MATH 141	3
Music	4,5,6,7	5,6,7	MHIS 105	3
Philosophy	5,6,7	6,7	PHIL 101	3
Physics	4,5	5,6	PHYS 201	4
Physics	6,7	7	PHYS 201, PHYS 202	8
Psychology	4,5,6,7	5,6,7	PSYC 101	4
Social & Cultural Anthropology	4,5,6,7	5,6,7	ANTH 103	3
Theatre Arts			THEA 107	3
Visual Arts	4,5,6,7	5,6,7	ARTF 139	1

## Credit for Cambridge International Examinations

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

Cambridge tests passed with final grades of A, B or C will, depending on the test, be considered for advanced standing and credit for the corresponding courses at VCU. The applicability of such credit toward the student's degree program is interpreted by the department or school in which the student seeks a degree. Credits accepted are counted as credits earned toward the degree, but are not used in the computation of the students GPA.

Students requesting evaluation of their Cambridge credits are to request an official copy of their transcript from the CIE coordinators at the student's specific high school. Official transcripts may be sent to Virginia Commonwealth University Transfer Center, 900 Park Ave., P.O. Box 842532, Richmond, VA 23284-2532.

The chart below provides information about the VCU equivalent for various Cambridge examinations. Note: Cambridge credits listed below are effective for spring 2013 admissions.

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

### Credit for Cambridge International Examinations

Cambridge exam	A-level VCU equivalent	AS-level VCU equivalent	VCU credit
Biology	BIOL 101/BIOZ 101	BIOL 101/BIOZ 101	4
Chemistry	CHEM 101/ CHEZ 101 <sup>1</sup>	CHEM 101/ CHEZ 101	4
English		UNIV 111	3
English literature	ENGL 215	ENGL 215	3

Mathematics	MATH 200	MATH 200	4
Mathematics	STAT 314	<sup>2</sup>	4
Physics	PHYS 201	PHYS 101/PHYZ 101	4
Divinity	RELS/HIST 327	<sup>2</sup>	3
Psychology	PSYC 101	PSYC 101	4
Music	MHIS 1XX	MHIS 1XX	3
Computing	CMSC 101	CMSC 101	3
Economics	ECON 203	ECON 203	3
Art and design	ARTS 1XX	ARTS 1XX	3

<sup>1</sup> Class/exam exclusively offered at AS-level.

<sup>2</sup> Class/exam exclusively offered at A-level.

## College Level Examination Program

The College Level Examination Program is designed to allow people who have gained knowledge outside the classroom to take examinations and receive college credit for what they have learned.

### Procedures for VCU students

- Students should obtain CLEP approval forms, information about CLEP general and/or subject examinations, VCU course equivalency information, optional essay requirements and CLEP applications from the Testing Center in the University College, Virginia Commonwealth University, Hibbs Hall, First Floor, P.O. Box 842500, Richmond, VA 23284-2500; (804) 827-8108.
- Students should discuss the examination(s) to be taken with an adviser, and obtain permission signatures from the adviser and dean of the school of the major on each of the three approval forms. If the optional essay is required for a subject examination, it should be indicated on the CLEP approval forms and on the CLEP application.
- Students should return the completed CLEP approval forms, the completed CLEP application and the proper fee to the Testing Center. After receipt of these materials and fees, the examination time(s) will be scheduled.
- The examination score and the result of the optional essay are sent to the dean's office in which the student is a major for final action. The dean then sends formal notification to the student, the Office of Records and Registration and the student's adviser.

### Regulations for VCU students

- CLEP credit is officially awarded only to students who are fully accepted into a VCU degree program.
- A student may not attempt a subject or general examination if it duplicates in part, or full, any VCU course or combination of courses that the student has already completed or enrolled in for credit. For example, a student who has completed courses in U.S. and European history, sociology, anthropology and psychology, or similar courses, is not eligible to take the social sciences and history general examination. The dean's office of the school in which the student is a major makes the decision about the appropriateness of taking a particular examination.
- If a student has earned CLEP subject examination credit, the student may not take a VCU course for credit that would duplicate the CLEP credits already earned.
- The CLEP general examination in English composition is not acceptable for VCU credit. Students may take the CLEP Freshman College Composition with essay subject examination for credit equivalent to UNIV 111. There is no CLEP exam equivalent for UNIV

200. In order to receive credit for the CLEP general examination in mathematics, the student must take the Mathematics Placement Test and test at the STAT 208, STAT 210 or MATH 200 level. To make arrangements to take this placement test, contact the Testing Center at (804) 827-8108. Results should be reported to the dean of the school in which the student is a major.

5. A maximum of 54 semester credits can be earned through CLEP examinations.

***Credit awarded on subject tests taken through the CLEP<sup>1</sup>***

Subject exam	Score	VCU equivalent	VCU credits
French (2 semesters)	50	FREN 101-FREN 102	8
French (4 semesters)	62	FREN 101-FREN 102, FREN 201-FREN 202	14
German (2 semesters)	50	GRMN 101-GRMN 102	8
German (4 semesters)	63	GRMN 101-GRMN 102, GRMN 201-GRMN 202	14
Spanish (2 semesters)	50	SPAN 101-SPAN 102	8
Spanish (4 semesters)	66	SPAN 101-SPAN 102, SPAN 201-SPAN 202	14
American government	50	POLI 103	3
Educational psychology	50	PSYC 305	3
History of the U.S. 1	50	HIST 103	3
History of the U.S. 2	50	HIST 104	3
Human growth & development	50	EDUS 301	3
Intro to psychology	50	PSYC 101	3
Intro to sociology	50	SOCY 101	3
Western civilization 1	50	HIST 101	3
Western civilization 2	50	HIST 102	3
College algebra	50	MATH 141	3
Calculus	50	MATH 200	3
Chemistry	50	CHEM 101-CHEM 102	6
College mathematics	50	MATH 131	3
Pre-calculus	50	MATH 151	3
General biology	50	BIOL 101 OR BIOL 151	3
General biology	70	BIOL 151-BIOL 152	6
Financial accounting	50	ACCT 203	3

Info systems & computer apps	50	INFO 360	3
Intro to business law	50	SCMA 323	3
Principles of marketing	50	MKTG 301	3
Microeconomics	50	ECON 210	3
Macroeconomics	50	ECON 211	3
College composition	50	UNIV 111	3

<sup>1</sup> Decisions regarding VCU equivalents were made in consultation with the VCU departments.

## Undergraduate credit by examination

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

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

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

## Military service and ROTC courses

The university may grant credit for formal military service school courses offered by the various branches of the U.S. armed forces. The guidelines for granting such credits include:

1. The positive recommendation of the Commission on Accreditation of Service Experiences of the American Council on Education as stated in the most recent edition of "A Guide to the Evaluation of Educational Experiences in the Armed Services" ([acenet.edu/news-room/Pages/Military-Guide-Online.aspx](http://www.acenet.edu/news-room/Pages/Military-Guide-Online.aspx) (<http://www.acenet.edu/news-room/Pages/Military-Guide-Online.aspx>)).
2. Acceptable scores earned on subject tests taken through Defense Activity for Non-traditional Education Support, a college-credit-by-exam-agency. The DANTES Subject Standardized Tests program is an extensive series of examinations in college subject areas that are comparable to the final or end-of-course examinations in undergraduate courses.
3. Acceptable scores earned on subject tests taken through the College-Level Exam Program, a college-credit-by-exam program.
4. NOTE: Credit is **not** awarded for experiential learning.

The applicability of such credit toward the student's degree program is interpreted by the department or school in which the student seeks a degree. Credits accepted are counted as credits earned toward the degree, but are not used in the computation of the student's GPA. Students should consult with the assistant or associate dean for undergraduate affairs of the school or college for further details about the procedures for awarding credit for military service school courses.

Credit is accepted directly from each of the above agencies. Students in all branches of the military may request their military transcripts from the Joint Service Transcript System online at <https://jst.doded.mil/smart/welcome.do>.

Military students may request their score sheets from the following website:

- CLEP and DSST subject exams: [dantes.doded.mil/service-members/transcripts](http://dantes.doded.mil/service-members/transcripts) (<http://dantes.doded.mil/service-members/transcripts>)

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

Army ROTC is open to any VCU student. Advanced standing may be granted to veterans, Junior ROTC graduates or members of the Reserves/National Guard after the department chair's review of academic records and verification of ROTC academic alignment. The number of credits accepted toward graduation requirements is determined by each school. See Military Science and Leadership (p. 133) in the "College of Humanities and Sciences" section of this bulletin.

### **Military credits awarded (from AARTS/SMARTS transcripts) based on ACE recommendations**

(Additional credit may be awarded on a case-by-case basis.<sup>1</sup>)

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

- <sup>1</sup> Decisions regarding VCU equivalents were made in consultation with the VCU departments.

### **Credit awarded for DSST subject exams through DANTES<sup>1</sup>**

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



Management information systems	46/400	INFO 360	3
Human resource management	46	MGMT 2XX	3
Introduction to business	46	BUSN 201, BUSN 202	6

<sup>1</sup> Decisions regarding VCU equivalents were made in consultation with the VCU departments.

#### **Credit awarded on subject tests taken through the CLEP<sup>1</sup>**

Subject exam	Score	VCU equivalent	VCU credits
French (2 semesters)	50	FREN 101-FREN 102	8
French (4 semesters)	62	FREN 101-FREN 102, FREN 201-FREN 202	14
German (2 semesters)	50	GRMN 101-GRMN 102	8
German (4 semesters)	63	GRMN 101-GRMN 102, GRMN 201-GRMN 202	14
Spanish (2 semesters)	50	SPAN 101-SPAN 102	8
Spanish (4 semesters)	66	SPAN 101-SPAN 102, SPAN 201-SPAN 202	14
American government	50	POLI 103	3
Educational psychology	50	PSYC 305	3
History of the U.S. 1	50	HIST 103	3
History of the U.S. 2	50	HIST 104	3
Human growth & development	50	EDUS 301	3
Intro to psychology	50	PSYC 101	3
Intro to sociology	50	SOCY 101	3
Western civilization 1	50	HIST 101	3
Western civilization 2	50	HIST 102	3
College algebra	50	MATH 141	3
Calculus	50	MATH 200	3
Chemistry	50	CHEM 101-CHEM 102	6
College mathematics	50	MATH 131	3
Pre-calculus	50	MATH 151	3
General biology	50	BIOL 101 OR BIOL 151	3
General biology	70	BIOL 151-BIOL 152	6

Financial accounting	50	ACCT 203	3
Info systems & computer apps	50	INFO 360	3
Intro to business law	50	SCMA 323	3
Principles of marketing	50	MKTG 301	3
Microeconomics	50	ECON 210	3
Macroeconomics	50	ECON 211	3
College composition	50	UNIV 111	3

<sup>1</sup> Decisions regarding VCU equivalents were made in consultation with the VCU departments.

## **Credits earned through the International Student Exchange Program**

Credits earned by a VCU student through ISEP appear on the student's transcript, but are not included in the computation of the student's cumulative GPA. See the "Education Abroad (p. 515)" section of this bulletin. This policy became effective July 1990.

## **Credits for dual-enrollment courses**

Qualified students who have taken college-level work while still enrolled in a secondary school may receive academic credit. Courses taken as dual enrollment courses will be treated as VCU courses or transfer credits according to the evaluation guidelines (p. 17).

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

## **Senior Citizens Higher Education Program**

A senior citizen is any person, who, before the beginning of any semester in which they claim entitlement to the senior citizen educational benefit is 60 years of age and has had legal domicile in the commonwealth of Virginia for one year. The senior citizen may take courses without paying tuition or mandatory fees, except for course-/program-related fees, under certain conditions. If the senior citizen had a taxable income of not more than \$23,850 for Virginia income tax purposes for the year preceding the year in which enrollment is sought, the individual may take a course for academic credit. If the person's taxable income exceeded \$23,850, the individual may only audit the course for free. A senior citizen, regardless of income level, may take a noncredit course for free.

No limit is placed on the number of terms, quarters or semesters in which a senior citizen who is not enrolled for academic credit may register for courses, but the individual can take no more than three noncredit courses in any one semester. There will be no restriction on the number of courses that may be taken for credit in any semester, or on the number of semesters in which an eligible senior citizen may take courses for credit. Upon determination that a person qualifies as a senior citizen, the university may require the senior citizen to submit the appropriate documents verifying their income, in addition to the completed senior citizen waiver form each semester in which the senior citizen requests enrollment for credit.

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

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

## Enrichment and acceleration opportunities

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

### Early Admission Program

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

### Advanced Scholars Program

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

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

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

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

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

### Teacher Cadet Program

The Teacher Cadet Program is a highly selective program for students who have expressed an interest in pursuing teaching as a career. The program follows a rigorous curriculum that is standardized throughout Virginia public schools. Qualified high school students from Richmond and surrounding area may be permitted to take EDUS 101 as a college-level course at the university while concurrently completing the high school diploma.

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

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

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

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

## Orientation

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

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

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

## Readmission guidelines

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

Students who withdraw from all courses after the first week of the semester are considered to have been enrolled for that semester. A student who does not attend VCU for three or more successive fall and spring semesters (excluding summer sessions), must submit an application for readmission to the Office of Admissions. See the Undergraduate Readmission/Continuous Enrollment Chart for details on

readmission and continuous enrollment. Students who have attended another institution and wish to return after the allowable absence period or who have been suspended since their last enrollment at VCU also must apply for readmission. This application must be made before the application submission date for the semester in which the student plans to return.

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

Readmission applicants who wish to change their majors may be required to meet additional requirements for some programs. Applicants to the School of the Arts must submit supplemental materials as described in the Application for Undergraduate Admission.

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

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

## Undergraduate readmission/continuous enrollment chart

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

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

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

Last enrolled semester	Must return semester
Spring 2014	Fall 2015
Summer 2014	Fall 2015
Fall 2014	Spring 2016

Spring 2015	Fall 2016
Summer 2015	Fall 2016
Fall 2015	Spring 2017
Spring 2016	Fall 2017
Summer 2016	Fall 2017
Fall 2016	Spring 2018
Spring 2017	Fall 2018
Summer 2017	Fall 2018
Fall 2017	Spring 2019
Spring 2018	Fall 2019
Summer 2018	Fall 2019
Fall 2018	Spring 2020
Spring 2019	Fall 2020
Summer 2019	Fall 2020
Fall 2019	Spring 2021
Spring 2020	Fall 2021
Summer 2020	Fall 2021
Fall 2020	Spring 2022
Spring 2021	Fall 2022
Summer 2021	Fall 2022
Fall 2021	Spring 2023
Spring 2022	Fall 2023
Summer 2022	Fall 2023
Fall 2022	Spring 2024
Spring 2023	Fall 2024
Summer 2023	Fall 2024
Fall 2023	Spring 2025
Spring 2024	Fall 2025
Summer 2024	Fall 2025
Fall 2024	Spring 2026
Spring 2025	Fall 2026
Summer 2025	Fall 2026
Fall 2025	Spring 2027
Spring 2026	Fall 2027
Summer 2026	Fall 2027
Fall 2026	Spring 2028
Spring 2027	Fall 2028
Summer 2027	Fall 2028
Fall 2027	Spring 2029
Spring 2028	Fall 2029
Summer 2028	Fall 2029
Fall 2028	Spring 2030
Spring 2029	Fall 2030
Summer 2029	Fall 2030
Fall 2029	Spring 2031
Spring 2030	Fall 2031
Summer 2030	Fall 2031

## The Honors College and guaranteed admission

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

## Tuition, fees and expenses

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

**Danielle L. Mitchell**  
Director

The Student Accounting Department is located at 1015 Floyd Avenue. The department is responsible for the assessment, billing and collection of tuition, room, board and other university fees. The department also bills third party payers for VCU charges and issues refunds to eligible students.

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

## Fees and expenses

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

## Student financial responsibility

Students who enroll are responsible for:

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

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

## Tuition and fees schedule

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

## Outstanding charges

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

Student accounts with balances owed the university are referred to the Collection Unit. Pursuant to Section 2.2-4805 et. seq., of the Code of Virginia, and in accordance with rules and regulations promulgated by the state comptroller and attorney general of the commonwealth of Virginia, VCU will charge interest, costs and fees on all accounts past due.

Students are reminded that they are ultimately responsible for any unpaid balance on their account as a result of the Office of Financial Aid or their sponsor canceling or reducing the award. The student remains financially responsible for the charges deferred on the basis of any financial aid, if later the student is determined ineligible. Students are also responsible for ensuring that all necessary actions have been taken to receive their financial aid awards. Also see the federal financial aid refund policy.

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

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

## Dishonored payment items

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

## Loan repayment

Before graduation or withdrawal from the university, students may be required to attend a loan counseling exit session. Please refer to the "Academic Regulations and General Degree Requirements" section of this bulletin.

## 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. For in-state tuition benefits, the student must comply with Section 23-7.4 of the Code of Virginia (<http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+23-7.4>).

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

New and continuing students initially classified as non-Virginians for tuition purposes may request a review of the initial residency 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 he or she is 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 his/her residency classification prior to the start of classes for the semester under consideration. In accordance with the Code of Virginia, applications received after the start of the semester must be considered for the next semester. Submit completed applications with documentation to the university residency appeals officer. Processing may require four to six weeks; therefore it is strongly recommended that applications be submitted earlier than the stated deadline.

Our 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. We provide information about the steps of our process and access to the applicable sections of the statute and the associated guidelines. We provide qualified staff to review the appeals and make decisions based on the information students provide. What we cannot do is provide advisement to students as to how to present their case for review; we cannot become the student's advocate since we must make the decision.

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

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

## Tuition and fees charges

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

Undergraduate students who are newly admitted to an undergraduate degree or certificate program beginning in or after the fall 2013 semester are classified as "non-block" for tuition-assessment purposes. Non-block students registered for less than 15 credit hours are charged tuition at a per-credit-hour rate. If registered for 15 or more credit hours, tuition for the additional credits (15 and more) will be assessed at a reduced per-credit-hour rate.

Undergraduate students who were initially enrolled in a degree or certificate program prior to the fall 2013 semester and are not required to reapply for admission to the university are classified as "block" for tuition-assessment purposes. Part-time undergraduate students, those enrolled in fewer than 12 credit hours, are charged tuition on a per-credit-hour rate based on their program. Tuition is charged at a flat rate from 12 to 18 credit hours and at a per-credit-hour rate (overload fee) for more than 18 credit hours during any semester for block students. Students classified as Virginia residents pay lower tuition than out-of-state students. See additional information on an academic overload in the "Registration policies (p. 52)" section of this chapter.

In addition to tuition, students must pay the mandatory fees described in this section.

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

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

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

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

## University fee

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

## Student activity fee

This fee 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 this 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. 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. The USHS offers unlimited office visits for acute and chronic ailments, after-hours phone advice for an urgent medical problem and most laboratory tests associated with acute illnesses ordered by the USHS staff, among other services. The fee does not cover accidental injury, emergency room visits or hospitalization. More specific information as to what is covered and not covered by the fee is available on the USHS website (<http://www.students.vcu.edu/health/services>).

## Technology fee

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

## Library fee

The library fee is charged to all undergraduate, graduate and professional students in all programs. Full-time students pay a flat rate. Part-time students pay a per-credit-hour rate. Fee revenues are used to sustain 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.

## Capital outlay fee

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

## UC campus learning fee

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

## 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.

## Off-campus fees

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

## Special fees

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 (<http://www.enrollment.vcu.edu/accounting>) website or to the specific school or department section in this bulletin.

## Housing and dining fees

### Housing fees

A nonrefundable prepayment fee of \$250 is required for new students at the time the housing/dorm application is submitted and is credited toward the student's first-semester housing costs. New and continuing

students should refer to cancellation deadlines established by VCU Residential Life and Housing if they wish to be released from their contractual obligations. After these dates, cancellations are not permitted and students will be held to the terms and conditions of their housing contracts. Students are advised to carefully read the terms and conditions of their housing contracts prior to signing.

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

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

## Dining fees

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

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

VCU dining plans consist of Blocks and Dining Dollars. Blocks provide a specific number of meals to be used at any time during the semester at Market 810 in Shafer Court Dining Center, Jonah's in the Larrick Student Center or any VCU Dining retail location participating in the VCU Dining Services Meal Exchange Program. More than one VCU dining plan may be purchased per semester; however, dining plan blocks and Dining Dollars do not carry over and are forfeited at the end of each semester.

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

## Dining Dollars

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

## Dining online enrollment and payment

Online enrollment for a VCU Dining Plan is available at [bsv.vcu.edu/vcufood](http://bsv.vcu.edu/vcufood) (<http://www.bsv.vcu.edu/vcufood>). Students will be billed through the Student Accounting Department and payment may be made online through VCU eServices at [eservices.vcu.edu](http://eservices.vcu.edu) (<http://www.eservices.vcu.edu>).

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

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

## Installment Payment Plan

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

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

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

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

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

## University refund policy

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

### Definition of drop vs. withdraw

**Drop** – Charges are removed to indicate that the student never attended the class. The student is not eligible to receive financial aid, and any financial aid already credited to the student's account based on the original course registration will be removed from the student's account and may create a balance due to the university.

**Withdraw** – Results in the academic grade of W. Charges are assessed and adjusted according to the University Refund Policy. Students who have been given a medical withdrawal are assessed and adjusted no

differently than other withdrawals. Students may owe a balance to the university.

### Fall and spring semesters – standard classes only

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

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

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

### Fall and spring semesters – short and nonstandard classes

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

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

### Summer semester – all courses

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

refund of tuition and fees is given for withdrawals during the summer semester.

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

### Holiday intersession – all courses

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

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

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

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

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

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

## Refunds for overpayments

An overpayment from financial aid and scholarships will be refunded automatically through the Financial Aid Refund Process, if the overpayment occurs while the student is currently enrolled. During the fall and spring semesters refunds will begin to be issued starting on the first day of classes.

Requests for refunds that are not generated from the overpayment of financial aid should be made in writing to VCU Student Accounting Department, P.O. Box 843036, Richmond, VA 23284-3036. Refund request

forms are available at the Student Services Centers and on the Student Accounting website (<http://www.accounting.vcu.edu>).

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

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

## Military services tuition relief, refund and reinstatement guidelines

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

1. Drop all courses before the end of the add/drop period and receive a full reduction of tuition and fee charges. Students residing in university housing and participating in a dining plan will be released from their housing and dining service contracts and will receive a prorated refund of these charges. Students will be asked to sign the drop request form with the director of military student services indicating that they are not receiving a financial aid refund. If the reduction of charges results in an overpayment on the account after any financial aid or third party awards have been reduced, the student will be issued a refund.  
This option might best meet the needs of students who are called to active duty service during the first week of school and did not receive a financial aid refund check or direct deposit.
2. Receive a grade of Incomplete (IM – incomplete military) in one or all courses. Students residing in university housing will be released from their housing and dining service contracts and will receive a prorated refund of these charges. Students who chose to take a grade of IM will not have tuition and fees reduced for these courses because, upon receipt of an approved change of grade, credits will still be earned for the semester. Students will have 12 months from the date that they return from active service to complete the course work and earn a course grade. If a student received financial aid, the amount recovered to the financial aid accounts will follow the Federal Financial Aid Refund Policy.  
This option might best meet the needs of students who have essentially completed all course work in a class for the semester, but have yet to turn in a final project, an exam or other materials. It should be agreed upon between the instructor and the student that the remaining course work can reasonably be completed during the 12-month period.
3. Accept administrative withdrawal (WM – withdrawn military) from all courses as of the effective date of the orders to active duty. If this option is elected, a full refund of all tuition, fees and prorated room and dining charges will be made. If a student received financial aid, the amount recovered to the financial aid accounts will follow the Federal Financial Aid Refund Policy. If the reductions of charges results in an overpayment on the account after any financial aid or third party awards have been reduced, the student will be issued a refund.

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

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

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

## Leaving the university

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

## Returning to the university

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

## Accident insurance

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

## Financial aid

Office of Financial Aid  
Harris Hall  
1015 Floyd Ave.  
P.O. Box 843026  
Richmond, Virginia 23284-3026  
Phone: (804) 828-6669  
Fax: (804) 827-0060  
[finaid.vcu.edu](http://finaid.vcu.edu) (<http://finaid.vcu.edu>)

**Marc Vernon**  
Executive director

The Office of Financial Aid provides a variety of services to help students afford higher education via grants, scholarships, work-study employment and loans. The Office of Financial Aid administers and distributes funds from federal, state, institutional and private fund sources. One-on-one appointments are available to students, their parents, faculty and staff. Financial aid funds are applied first to the student's university bill. Refunds are generated when financial aid exceeds university charges.

VCU uses all available funds to help students gain access to a college education. Eligibility for financial aid varies depending on a student's academic and financial circumstances. In most cases, each student will qualify for some form of financial assistance. Current and detailed information on financial aid programs, policies, procedures and links to free scholarship search services are available on the office's website at [finaid.vcu.edu](http://finaid.vcu.edu) (<http://finaid.vcu.edu>).

## Counseling center locations

The Office of Financial Aid provides four counseling and information centers to prospective and enrolled students. You may visit the offices in person or submit a written request to receive printed information.

### Monroe Park Campus

Grace E. Harris Hall  
1015 Floyd Avenue, First Floor  
P.O. Box 843026  
Richmond, Virginia 23284-3026  
Phone: (804) 828-6669  
Fax: (804) 827-0060  
[finaid.vcu.edu/resources/contact.html](http://finaid.vcu.edu/resources/contact.html) (<http://finaid.vcu.edu/resources/contact.html>)

### Schools of Allied Health Professions, Nursing and Pharmacy

VMI Building, Room 334  
1000 East Marshall Street  
P.O. Box 980277  
Richmond, Virginia 23298-0277  
Phone: (804) 828-2702  
Fax: (804) 827-0060

### School of Dentistry

Lyons Building, Room 309  
520 North 12th Street  
P.O. Box 980566  
Richmond, Virginia 23298-0566  
Phone: (804) 828-9953  
Fax: (804) 828-6072

### School of Medicine

McGlothlin Medical Education Center



1201 East Marshall Street, Room 4-306  
 P.O. Box 980565  
 Richmond, Virginia 23298-0565  
 Phone: (804) 828-4006  
 Fax: (804) 827-5555

## General information

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

### eServices – online records access

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

### Email – official method of communication

Students are required to obtain an official VCU student email account within one week of the beginning of their first semester of enrollment. Students are responsible for reading university-related communications sent to their official VCU student email account in a timely fashion. 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 at [vcu.edu/vcu/webmail.html](http://vcu.edu/vcu/webmail.html) (<http://www.vcu.edu/vcu/webmail.html>).

### Identification requirements

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

### University bill

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

## Types of financial aid

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

### Loans

In terms of total dollars available, long-term loan programs provide the most dollars. A loan is money borrowed and must be repaid at a later time. In most cases, the student is the borrower and repays the loan once he or she is no longer pursuing a degree or certification at least at the half-time enrollment level. There also is a loan program where the parent is the borrower and begins repaying the loan while the student is still

enrolled. All educational loans carry competitive interest rates and terms. Some include interest benefits, meaning the federal government pays the interest on the loan while the student is enrolled. Student loan repayment generally begins after the student is no longer enrolled half time. Multiple repayment plans provide the borrower with flexible repayment options. Selected loan programs include:

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

First-time borrowers in the Federal Direct Loan Program must complete entrance counseling prior to the first loan disbursement. Directions for completion of this requirement can be found on the website of the Financial Aid Office at [finaid.vcu.edu/assistance/loans/entrance.html](http://finaid.vcu.edu/assistance/loans/entrance.html) (<http://finaid.vcu.edu/assistance/loans/entrance.html>).

## Grants and scholarships

Grants and scholarships are awarded without any expectation of repayment. The total dollar amount of available aid in the form of grants and scholarships is less than that of total dollar amount of loans. Most grants are reserved for students with the greatest financial need. Most scholarships are based on merit. Selected programs include:

### Undergraduate programs

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

### Health profession programs

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

## Work-study

Work-study is a form of financial aid that pays wages for work performed through employment. Work-study positions are located on campus and in approved locations off campus. Please visit the Financial Aid website at [finaid.vcu.edu](http://finaid.vcu.edu) (<http://finaid.vcu.edu>).

## Eligibility, availability and special circumstances

### Eligibility for financial aid

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

- Submit a Free Application for Federal Student Aid (FAFSA) 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 (GED) Certificate.
- Be enrolled or accepted for enrollment to an eligible degree or certificate program.
- Be enrolled at least half time, six or more undergraduate credit hours (exceptions possible for Pell Grants) or five or more graduate credit hours.
- Be a U.S. citizen or eligible noncitizen.
- Have a valid Social Security number (unless from the Republic of the Marshall Islands, the Federated States of Micronesia or the Republic of Palau).
- Meet Satisfactory Academic Progress (SAP) standards as defined by the VCU Office of Financial Aid (the full VCU SAP policy is available on the Web at [finaid.vcu.edu/progress](http://finaid.vcu.edu/progress) (<http://finaid.vcu.edu/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 in the federal Student Guide, available in print form from the VCU Office of Financial Aid or electronically on the Federal Student Aid website at [studentaid.ed.gov/sa](http://studentaid.ed.gov/sa) (<https://studentaid.ed.gov/sa>).

## Availability of financial aid for special programs

### Summer studies

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

Students interested in financial aid for summer must have a FAFSA on file with the Financial Aid Office and complete a summer aid application, available on the Financial Aid website.

### Study abroad

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

## Special circumstances

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

- Loss or reduction of employment earnings.
- Disability or death of parent or spouse.
- Separation or divorce.
- Loss or reduction of untaxed income.
- Unusual medical expenses.

- Dependent and child-care expenses.

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

## Applying for financial aid

### Application process

The financial aid application process for the academic year begins Jan. 1. All students are encouraged to complete and submit the Free Application for Federal Student Aid (FAFSA) as soon as possible after Jan. 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 (available online at [www.fafsa.ed.gov](http://www.fafsa.ed.gov)). Once the FAFSA is filed, the federal processor will send the student a Student Aid Report (SAR) or electronic SAR Acknowledgment, 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.

### Priority filing dates

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

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

Students should complete the FAFSA early so that it can be processed by the priority filing date of March 1 and may use actual or estimated income and tax data in order to meet that deadline. Once tax return(s) have been processed, the estimated information must be updated. Applicants may be able to use the IRS Data Retrieval Tool to transfer federal tax return information into the FAFSA. Students will receive their actual award letter after their FAFSA application data has been verified.

### Applying after the priority filing date

Students can and should apply for financial aid even if they missed the priority filing date because they may still qualify for the Federal Pell Grant and Federal Direct Loans; their parents may qualify for Federal Direct PLUS Loans. If students have not applied for financial aid in a timely manner, they may want to participate in the VCU Installment Payment Plan, which budgets each semester's bill over four payments. Information about this plan can be found on the Student Accounting Department's website at [enrollment.vcu.edu/accounting/installment-payment-plan](http://enrollment.vcu.edu/accounting/installment-payment-plan) (<http://enrollment.vcu.edu/accounting/installment-payment-plan>).

### Verification

To ensure that information provided on the FAFSA is accurate, a student's application may be selected for review at any time during an enrollment period, and the student will be requested to provide

documentation that supports the information. By signing the FAFSA, a student (and the student's parent or spouse, if applicable) agrees to furnish such documentation. If the documentation is not provided when requested, financial aid awards will be canceled and any funds already disbursed may need to be repaid.

## Satisfactory Academic Progress

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

1. **Grade point average.** Undergraduate students must maintain a cumulative GPA based on credit hours attempted (transfer and AP credit hours are included in total hours attempted) as noted below. Graduate students must maintain a 3.0 cumulative GPA as specified by their department.
  - 1 to 23 credit hours attempted: minimum 1.5 GPA
  - 24 to 53 credit hours attempted: minimum 1.8 GPA
  - 54 to 84 credit hours attempted: minimum 2.0 GPA
  - 85 or more credit hours attempted: minimum 2.0 GPA
2. **Completion rate.** The completion rate is measured by the number of credit hours earned divided by the number of credit hours attempted. All students who need financial aid funding must successfully complete at least 67 percent of all credit hours attempted (attempted hours include incompletes, withdrawals, repetitions, progress grades, continuance grades and noncredit remedial courses).
3. **Overall progress toward degree/certificate.** Overall progress is measured by the number of credit hours attempted divided by the number of credit hours necessary to complete the degree or certificate program. Students who need financial aid funding may attempt no more than 150 percent of the hours required to complete their degree or certificate program.

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

## Federal financial aid refund policy

Students who receive federal Title IV 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 programs from which the student was awarded.

For VCU students who withdraw prior to completing 60 percent of the semester, they will have to return or repay all or a portion of the aid funds that had been disbursed to their VCU account. As a result, students

who withdraw prior to completing 60 percent of the semester may be responsible for all or a portion of their university bill that was previously paid by financial aid sources.

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

## Military educational benefits and programs

Veterans Certification for VCU is completed within the Office of Records and Registration located in Harris Hall on the Monroe Park Campus. Detailed information about eligibility for Veterans Affairs programs is available at [enrollment.vcu.edu/rar/veterans-certification](http://enrollment.vcu.edu/rar/veterans-certification) (<http://enrollment.vcu.edu/rar/veterans-certification>).

Veterans Certification  
Office of Records and Registration  
Harris Hall  
1015 Floyd Avenue  
P.O. Box 842520  
Richmond, Virginia 23284-2520  
Phone: (804) 828-6166  
Fax: (804) 828-8121  
Email: [rar@vcu.edu](mailto:rar@vcu.edu)  
[enrollment.vcu.edu/rar/veterans-certification](http://enrollment.vcu.edu/rar/veterans-certification) (<http://enrollment.vcu.edu/rar/veterans-certification>)

## Available programs

For details on any of these programs, please visit the Veterans Certification page on the Division of Strategic Enrollment Management website at [enrollment.vcu.edu/rar/veterans-certification](http://enrollment.vcu.edu/rar/veterans-certification) (<http://enrollment.vcu.edu/rar/veterans-certification>).

- 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)
- Reserve Education Assistance Program/Reap (Chapter 1607)
- Tutorial Assistance Program
- VA Work-Study Program
- Virginia Military Survivors and Dependents Education Program
- Post 9-11 – Active Duty (Chapter 33)/Yellow Ribbon Program
- Yellow Ribbon Program
- Transferability of Benefit

## Eligibility requirements

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

1. The veteran/spouse/dependent must be accepted into a degree or certificate program or be matriculating as a nondegree-seeking student for only two semesters before having to declare a major.

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

## Academic advising

Academic advising helps students achieve academic success, as well as develop and pursue educational and personal goals. The advising program also helps students connect to the many resources offered within the University Academic Advising and throughout the university.

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

## First-year students

University Academic Advising provides academic advising for all first-year students, regardless of their majors. All incoming students are assigned to a specific academic adviser who works closely with them throughout their first year. Advising takes place in group settings through the UNIV 101 Introduction to the University class and through individual appointments. Students can expect their advisers to help them to understand university procedures, interpret general education and major requirements, address academic difficulties and help discover the educational and career goals best suited to them.

Academic advising is an ongoing process. Advisers want to have continuing relationships with their advisees. While first-year students are required to meet with their assigned advisers before registering for classes each semester, it is also important for students to meet with advisers throughout the first year. Students can e-mail advisers to seek help and attend group advising sessions. After students attain sophomore standing or are admitted into their programs of study, they will be reassigned to faculty advisers within their majors.

While students are ultimately responsible for understanding information about regulations, majors and courses as outlined in the Undergraduate Bulletin, academic advisers can help students interpret information to ensure they make appropriate educational choices.

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

## Undeclared students

The UAA Discovery Program offers specialized advising for students who are undecided about their programs of study and have not yet declared a major. Discovery Program advisers help undeclared students consider educational options and make appropriate choices based on personal interests, skills and abilities, values, and professional goals.

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

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

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

## Transfer students

Students who transfer to VCU come from a wide range of two- and four-year institutions. VCU recognizes that transfer students constitute a very diverse group with varying and unique needs. Transfer students are served directly through the school or college according to their intended program of study. The Transfer Center helps transfer students work with undergraduate admissions and the undergraduate units to seek ways to continuously facilitate and enhance the transfer process to VCU. The center also assists the schools and colleges of VCU to develop relationships with Virginia community colleges. VCU's chief transfer officer develops and maintains articulation agreements with sister institutions, maintains the VCU Transfer Guide and serves as a point of contact for prospective and incoming transfer students.

For more information on advising programs, visit the Transfer Center website (<http://www.transfer.vcu.edu>) or call (804) 827-1349. Also see the VCU Transfer Guide website at [transferguide.vcu.edu](http://transferguide.vcu.edu) (<http://transferguide.vcu.edu>).

## Pre-health majors

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

Students pursuing admission into baccalaureate degree programs in clinical laboratory sciences, clinical radiation sciences, dental hygiene or nursing will have "pre-major" status until successful admission into the degree program. The pre-health majors are not degree-granting majors, so students cannot complete a degree in any of the pre-health majors. As students successfully complete science courses and other admissions requirements, students and advisers will determine a timeframe to apply for admission into a degree-granting program in a health care field. UAA

provides academic advisers who are uniquely trained to work with pre-health majors, guiding students as they pursue the required course work and skill sets outlined for competitive candidacy in each of these pre-major programs. These advisers are also trained to guide students through parallel majors that will still support successful graduation and career outcomes.

## Pre-health major in clinical laboratory sciences

Students in the pre-health major in clinical laboratory sciences must complete the two-year program requirements (a total minimum of 60 credits) for application to the Bachelor of Science degree program in clinical laboratory sciences offered by the VCU School of Allied Health Professions. Applications to the program are normally submitted in spring of the sophomore year. Students apply to the baccalaureate program through Undergraduate Admissions in the spring of the year preceding entrance. For example, if a student is planning to start the program in fall of 2018, they would begin the admissions process at the start of the spring semester of 2018. All prerequisite course work should be completed by the summer of the year of desired admission. For example, if a student plans on entering the program in fall of 2018, the course work must be completed by the summer of 2018 (before entrance).

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

## Requirements for the pre-health major in clinical laboratory sciences

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

In addition to the academic requirements, there are "essential functions" (non-academic) of the clinical laboratory sciences program that students must master to successfully participate in the program. The following is a list of the essential technical abilities and skills for admission that applicants must possess: manual dexterity, fine motor skills, mobility, vision, hearing, the ability to verbally communicate, read and write in the English language, emotional stability, and (other) personal attributes including integrity, responsibility, tolerance and

respect. Although not required, introduction to clinical laboratory sciences, additional mathematics, biology or chemistry courses, and a physics course are highly recommended.

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

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

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

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

Students who do not meet these requirements may see a pre-health adviser, but they will be referred for programming and not assigned to an adviser.

## Prerequisites for the clinical laboratory sciences program

### VCU courses

Select one of the following biology sequences:		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
Additional biology credits		8
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
BIOL 201 & BIOZ 201	Human Biology and Human Biology Laboratory	
BIOL 205	Basic Human Anatomy	
BIOL 209 & BIOZ 209	Medical Microbiology and Medical Microbiology Laboratory	
BIOL 300	Cellular and Molecular Biology	
BIOL 303	Microbiology	
BIOL 310	Genetics	
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
Select one of the following chemistry sequences:		4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	
MATH 151	Precalculus Mathematics	4
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3



UNIV 200	Inquiry and the Craft of Argument	3
Humanities or fine arts elective (see Core Curriculum – humanities/fine arts approved list)		3
Social science elective (see Core Curriculum – social/behavioral science approved list)		3
Electives to reach 60 credit-hour minimum requirement for entrance into the program	16-17	
Total Hours	59-60	

## Sample curriculum outline

### Freshman year

Fall semester	Hours
Select one of the following sequences:	4
BIOL 101 Biological Concepts & BIOZ 101 and Biological Concepts Laboratory	
OR	
BIOL 151 Introduction to Biological Sciences I & BIOZ 151 and Introduction to Biological Science Laboratory I	
MATH 151 Precalculus Mathematics	4
UNIV 111 Focused Inquiry I	3
Humanities/fine arts elective	3
Term Hours:	14

### Spring semester

CHEM 101 General Chemistry & CHEZ 101 and General Chemistry Laboratory I	4
UNIV 112 Focused Inquiry II	3
Additional biology course and laboratory	4
Elective	3
Social science elective	3
Term Hours:	17

### Sophomore year

Fall semester	Hours
CHEM 102 General Chemistry & CHEZ 101 and General Chemistry Laboratory I	4
UNIV 200 Inquiry and the Craft of Argument	3
Additional biology course and laboratory	4
Elective	3
Term Hours:	14

### Spring semester

Select one of the following sequences:	4
CHEM 301 Organic Chemistry & CHEZ 301 and Organic Chemistry Laboratory I	
OR	
CHEM 309 Quantitative Analysis & CHEZ 309 and Quantitative Analysis Laboratory	
Electives (to reach 60 credit-hour minimum requirement)	11
Term Hours:	15
Total Hours:	60

## Total minimum requirement (for admission to clinical laboratory sciences program) 60 credits

## Pre-health major in clinical radiation sciences

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

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

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

Students are strongly encouraged to consult with a UAA pre-health major academic adviser to learn about admission requirements that are specific to the program and to speak about alternate/parallel majors. For more information about the admission requirements for the B.S. in Clinical Radiation Sciences, visit the department's website (<http://www.sahp.vcu.edu/departments/radsci/admissions-and-prerequisites>).

## Requirements for the pre-health major in clinical radiation sciences

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

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

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

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

Following a review of admissions credentials, an interview with the admissions committee will be required for most applicants. If needed, the department will contact the student to schedule an interview. Following admission, successful completion of a criminal background check



and drug testing will be required (at student expense) for participation in clinical education courses. Failure to pass one of these tests will prevent the student from successfully completing the clinical education requirements and, therefore, the program.

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

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

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

Students who do not meet these requirements may see a pre-health adviser, but they will be referred for programming and not assigned to an adviser.

## Prerequisites for the clinical radiation sciences program

### VCU courses

BIOL 205	Basic Human Anatomy <sup>1</sup>	4
MATH 141	Algebra with Applications	3
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
Select one of the following:		4
PHYS 101 & PHYZ 101	Foundations of Physics and Foundations of Physics Laboratory	OR
PHYS 201	General Physics <sup>2</sup>	
PSYC 101	Introduction to Psychology	4
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
Humanities or fine arts elective (see Core Curriculum – humanities/fine arts approved list)		3
Total Hours		28

<sup>1</sup> The prerequisites for BIOL 205 include BIOL 101 and BIOZ 101.

<sup>2</sup> The prerequisite for PHYS 201 is MATH 151.

## Sample curriculum outline

### Freshman year

Fall semester		Hours
MATH 141	Algebra with Applications	3
PSYC 101	Introduction to Psychology	4
UNIV 111	Focused Inquiry I	3
Humanities/fine arts elective		3
Term Hours:		13

### Spring semester

BIOL 205	Basic Human Anatomy	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
UNIV 112	Focused Inquiry II	3
Select one of the following:		4

PHYS 101 & PHYZ 101	Foundations of Physics and Foundations of Physics Laboratory	OR
PHYS 201	General Physics	
Term Hours:		15
Total Hours:		28

## Total minimum requirement (for admission to clinical radiation sciences program) 28 credits Pre-health major in dental hygiene

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

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

## Requirements for the pre-health major in dental hygiene

Students in the pre-health major in dental hygiene must complete the specific prerequisite courses outlined below, totaling a minimum 60 credit hours. The Dental Hygiene Program does not accept grades of D and all courses taken (repeated) are factored into the GPA. Please note that online math/science course are not acceptable. Science courses must be completed within six years of matriculation. Applicants who are non-native English speakers must have a minimum TOEFL score of 550 (paper), 213 (computer) or 80 (internet-based).

Students interested in the pre-health major in dental hygiene must complete biological concepts and laboratory, human anatomy (laboratory included), human physiology and laboratory, medical microbiology and laboratory, and general chemistry I and laboratory. The non-science prerequisites for the pre-pre-health major are: English composition (UNIV 111, UNIV 112 and UNIV 200), statistics, introduction to psychology, introduction to sociology, effective speech, a visual or performing arts course, humanities elective, and elective courses to complete the 60

credit-hour requirement needed to enroll in the dental hygiene degree program. DENS 101, although not required, is highly recommended.

The remainder of the 60 required credits can be chosen from any of the following areas of study: science, math, computer usage, first aid and CPR, and humanities. Science electives are strongly recommended.

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

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

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

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

Students who do not meet these requirements may see a pre-health adviser, but they will be referred for programming and not assigned to an adviser.

## Prerequisites for the dental hygiene program

### VCU courses

BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
BIOL 205	Basic Human Anatomy	4
BIOL 209 & BIOZ 209	Medical Microbiology and Medical Microbiology Laboratory	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I <sup>1</sup>	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PSYC 101	Introduction to Psychology	4
SPCH 121	Effective Speech	3
SOCY 101	Introduction to Sociology	3
STAT 210	Basic Practice of Statistics <sup>2</sup>	3
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Humanities elective		3
Visual or performing arts		3
Electives to reach 60 credit-hour minimum requirement for entrance into the program		12
<b>Total Hours</b>		<b>60</b>

<sup>1</sup> The prerequisite for CHEM 101 is CHEM 100 with a minimum grade of C or high school chemistry and a satisfactory combination of math SAT score and high school GPA. The math pre- or corequisite is MATH 151 (precalculus). CHEM 100 and MATH 151 can be used to count toward the elective requirements.

<sup>2</sup> The prerequisite for STAT 210 is MATH 131, MATH 141, MATH 151 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course.

## Sample curriculum outline

### Freshman year

Fall semester		Hours
BIOL 101	Biological Concepts	4
& BIOZ 101	and Biological Concepts Laboratory	
MATH 151	Precalculus Mathematics	4
PSYC 101	Introduction to Psychology	4
UNIV 111	Focused Inquiry I	3
Term Hours:		15

### Spring semester

BIOL 205	Basic Human Anatomy	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
SOCY 101	Introduction to Sociology	3
STAT 210	Basic Practice of Statistics	3
UNIV 112	Focused Inquiry II	3
Term Hours:		17

### Sophomore year

Fall semester		Hours
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
SPCH 121	Effective Speech	3
UNIV 200	Inquiry and the Craft of Argument	3
Visual or performing arts		3
Term Hours:		13

### Spring semester

BIOL 209 & BIOZ 209	Medical Microbiology and Medical Microbiology Laboratory	4
Humanities elective		3
Electives		8-9
Term Hours:		15-16
Total Hours:		60-61

## Total minimum requirement (for admission to dental hygiene program) 60 credits

## Pre-health major in nursing

Students interested in the highly competitive nursing program must complete the pre-health major in nursing requirements prior to application. A total minimum of 28 credits is required for application to the traditional Bachelor of Science in Nursing degree program. Students must also present SAT, ACT or GRE test scores at the time of application to the nursing program. A minimum cumulative GPA is also required. Applicants whose native language is not exclusively English must submit TOEFL or IELTS test scores. For more information about these requirements, visit the School of Nursing's website (<http://nursing.vcu.edu>).

Because admission to the B.S. in Nursing program is highly competitive, it is imperative that all pre-health students who intend to pursue a major in nursing work in tandem with their UAA pre-health major academic

adviser to consider parallel majors that satisfy similar career outcomes. Completion of the pre-health major in nursing does not guarantee admission to the traditional program for the B.S. in Nursing nor does it result in a college degree.

## Requirements for the pre-health major in nursing

Students applying to the traditional B.S. in Nursing degree program must complete biological concepts with laboratory, human anatomy (lab included) with a minimum grade of B, principles of nutrition and an approved second laboratory science course.<sup>1</sup> The non-science prerequisites for the pre-health major in nursing are: UNIV 111 and UNIV 112, introduction to psychology and general sociology. Although math is not required for admission to the School of Nursing, students admitted into the nursing program complete a statistics class. Therefore, we recommend that students who place into college algebra complete a math class during the first year.

While not a requirement of the pre-health major in nursing, students who have space in their schedules to accommodate additional classes are encouraged to begin working on the collateral requirements of the baccalaureate degree. These courses include: BIOL 209 and BIOZ 209, both with minimum grades of B; PHIL 201; PHIS 206 and PHIZ 206, both with minimum grades of B; PSYC 304; STAT 210; and UNIV 200.

<sup>1</sup> If high school chemistry (with laboratory) with a minimum grade of C has **not** been completed, one semester of general chemistry with laboratory (CHEM 101 and CHEZ 101) must be taken. In order to be eligible for CHEM 101, students must meet the placement requirements. If high school chemistry with a minimum grade of C has been completed, choose from the following **approved second laboratory sciences**: BIOL 103; BIOL 151 and BIOZ 151; BIOL 152 and BIOZ 152; BIOL 201 and BIOZ 201; CHEM 101 and CHEZ 101; PHYS 101 and PHYZ 101; PHYS 107. Note that these courses may have pre- or corequisites.

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

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

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

Students who do not meet these requirements may see a pre-health adviser, but they will be referred for programming and not assigned to an adviser.

## Prerequisites for the traditional nursing program

### VCU courses

BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
BIOL 205	Basic Human Anatomy	4
BIOL 217	Principles of Nutrition	3
PSYC 101	Introduction to Psychology	4
SOCY 101	Introduction to Sociology	3
UNIV 111	Focused Inquiry I	3

UNIV 112	Focused Inquiry II	3
Approved second laboratory science		4
Total Hours		28

## Sample curriculum outline

### Freshman year

Fall semester		Hours
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
MATH 141	Algebra with Applications <sup>1</sup>	3
PSYC 101	Introduction to Psychology	4
UNIV 111	Focused Inquiry I	3
Approved second laboratory science (must meet placement requirements)		4
Term Hours:		18

### Spring semester

BIOL 205	Basic Human Anatomy	4
BIOL 217	Principles of Nutrition	3
SOCY 101	Introduction to Sociology	3
UNIV 112	Focused Inquiry II	3
Term Hours:		13
Total Hours:		31

<sup>1</sup> Students placing into MATH 141 should take this course their first semester in college.

## Total minimum requirement (for admission to traditional nursing program) 31 credits

## Pre-health and pre-law advising tracks

The UAA provides advising programs to assist students in preparation for admission into health sciences programs. Preparatory programs are available for careers in medicine, dentistry, dental hygiene, clinical laboratory sciences, radiation sciences, nursing, occupational therapy, optometry, pharmacy, physical therapy and veterinary medicine. Additionally, a post-baccalaureate health sciences certificate is available to students who have already earned bachelor's degrees in non-science areas and plan to enter doctoral-level health science training programs.

With the exception of clinical laboratory sciences, clinical radiation sciences, dental hygiene and nursing, which are classified as pre-health majors (p. 35), pre-health programs will be designated on a student's record as an advising track interest.

In addition to a pre-health advising track interest, students designate any bachelor's degree program as a primary major. Students who do not designate a specific major or who are undecided about a major will be placed into the interdisciplinary Bachelor of Science in Science professional science concentration. Students will work with pre-health advisers to plan courses to meet their advising track and major interests.

The interdisciplinary science program is offered through the College of Humanities and Sciences. The concentration in professional science allows students the flexibility to work toward a bachelor's degree while taking the prerequisite courses for their intended health profession. Students will work closely with pre-health advisers to choose courses to fill health care program prerequisites and major requirements. As students successfully complete science courses and other admissions

requirements, students and advisers will determine a timeframe to apply for admission into a health care training programs.

The Office of Pre-health Advising offers many opportunities for students to become more involved in their chosen professions. Advisers work closely with students to ensure their intended majors and pre-health advising track areas of interest match closely to students' interests, values and skills.

For more information on advising programs, visit the pre-health website or call (804) 827-8648.

## Pre-law advising program

The University College supports aspiring law students by offering advisory services regarding the law school admissions process. The coordinator of pre-law advising provides guidance and resources to students interested in pursuing a legal career and, where appropriate, acts as a liaison with law school admission offices. Students are offered assistance regarding curriculum, application procedure, financial aid and the law school admission test in preparation for the study of law. The Law School Admission Council (<http://www.LSAC.org>) and the American Bar Association (<http://www.ABAnet.org>) provide comprehensive online information for students regarding preparation for law school, law school admission and accreditation, as well as careers in the legal profession.

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

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

## Preparation for the study of dentistry

### Important general information

Students interested in the pre-dental advising track must complete the necessary prerequisites for dental school (a total minimum of 90 credit hours). Many students earn a baccalaureate degree before entering the program. Students interested in dental school should consult with a pre-health academic adviser to learn about requirements that are specific to the schools of dentistry to which they hope to apply.

Admission to and completion of the pre-dental advising track does not constitute admission to VCU's School of Dentistry. Students must apply separately to the dental school of their choice at the appropriate time. Students with an interest in preparing for dental school should

declare an academic major while also indicating a pre-dental advising track. Students do not earn a pre-dental degree. Students unsure of their academic majors initially should clarify their academic interests through regular conversations with their advisers. Pre-dental students are encouraged to major in fields of greatest interest to them.

## Prerequisites for dental school

Students need to complete the prerequisite science courses before being eligible to start the dental program at the VCU School of Dentistry. Students are also required to complete the Dental Admission Test. The DAT is taken prior to students applying to dental school and results are weighed heavily in admissions decisions. Students preparing for the DAT are strongly advised to take courses to build competency in these areas prior to taking the exam. It is not necessary to have completed all prerequisite course work or to have taken the DAT prior to submitting your application to dental school. However, you must complete all prerequisite courses and take the DAT before entering VCU's dental program.

## Science and non-science courses required for dental school

General biology, general chemistry, organic chemistry, biochemistry and physics are required science prerequisites for admission to dental school.

English composition (Focused Inquiry I and II) and mathematics are non-science prerequisites required for dental school.

Other upper-level science courses in general microbiology, bacteriology, animal or vertebrate physiology, anatomy, genetics and cell biology are strongly recommended. If time permits and the courses are available, courses in immunology, embryology, or developmental biology and histology are highly recommended. Additionally, non-science courses in the behavioral sciences and those involving psychomotor skills are recommended.

## Prerequisites for dental school

### VCU courses

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 403	Biochemistry I	3
MATH 151	Precalculus Mathematics	4
PHYS 201 or PHYS 207	General Physics <sup>1</sup> University Physics I	4-5
PHYS 202 or PHYS 208	General Physics <sup>2</sup> University Physics II	4-5
STAT 210	Basic Practice of Statistics	3

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
Additional electives to total 90 credits		38-40
Total Hours		88-92

<sup>1</sup> MATH 200 is a prerequisite for PHYS 207.

<sup>2</sup> MATH 201 is a prerequisite for PHYS 208.

## Sample curriculum outline

### Freshman year

Fall semester		Hours
BIOL 151	Introduction to Biological Sciences I	4
& BIOZ 151	and Introduction to Biological Science Laboratory I	
CHEM 101	General Chemistry	4
& CHEZ 101	and General Chemistry Laboratory I	
MATH 151	Precalculus Mathematics	4
UNIV 111	Focused Inquiry I	3
Term Hours:		15

### Spring semester

BIOL 152	Introduction to Biological Sciences II	4
& BIOZ 152	and Introduction to Biological Science Laboratory II	
CHEM 102	General Chemistry	4
& CHEZ 102	and General Chemistry Laboratory II	
STAT 210	Basic Practice of Statistics	3
UNIV 112	Focused Inquiry II	3
Term Hours:		14

### Sophomore year

Fall semester		Hours
CHEM 301	Organic Chemistry	5
& CHEZ 302	and Organic Chemistry Laboratory II	
Electives or major requirements		11
Term Hours:		16

### Spring semester

CHEM 302	Organic Chemistry	5
& CHEZ 302	and Organic Chemistry Laboratory II	
Electives or major requirements		10-11
Term Hours:		15-16

### Junior year

Fall semester		Hours
CHEM 403	Biochemistry I	3
PHYS 201	General Physics	4-5
or PHYS 207	or University Physics I	
Electives or major requirements		8
Term Hours:		15-16

### Spring semester

PHYS 202	General Physics	4-5
or PHYS 208	or University Physics II	

Electives or major requirements	11
Term Hours:	15-16
Total Hours:	90-93

## Total minimum requirement (for admission to dental school) 90 credits

## Preparation for the study of medicine

### Important general information

Students interested in the pre-medicine advising track must obtain a bachelor's degree and complete the necessary prerequisites for medical school. Students interested in medical school should consult with a pre-health academic adviser to learn about requirements that are specific to the schools of medicine to which they hope to apply.

Admission to and completion of a pre-medical program or advising track does not constitute admission to VCU's School of Medicine. Students must apply separately to the medical school of their choice at the appropriate time.

Students with an interest in preparing for medical school should declare an academic major while also indicating a pre-medical advising track. Students do not earn a pre-medical degree. Students unsure of their academic majors initially should clarify their academic interests through regular conversations with their advisers. Pre-medical students are encouraged to major in fields of greatest interest to them.

### Prerequisites for medical school

The American Association of Medical Colleges recommends students gain a core set of competencies in preparation for the Medical College Admissions Test. The MCAT is taken prior to students applying to medical school and results are weighed heavily in admissions decisions. Students preparing for the MCAT are strongly advised to take courses to build competency in these areas prior to taking the MCAT exam.

### Science and non-science courses required for medical school

General biology, cell biology, general chemistry, organic chemistry, biochemistry and physics are required science prerequisites for admission to Medical School.

Other science courses, including genetics, physiology and microbiology, though not required, are strongly recommended for pre-medical students.

Introductory psychology, sociology and statistics are non-science prerequisites required for medical school.

### Additional requirements for VCU School of Medicine

In addition to the prerequisites listed above, VCU School of Medicine requires pre-medical students to take two semesters of English composition and two semesters of mathematics (general statistics can count as one semester).

### Prerequisites for medical school

#### VCU courses

BIOL 151	Introduction to Biological Sciences I	4
& BIOZ 151	and Introduction to Biological Science Laboratory I	



BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 300	Cellular and Molecular Biology	3
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 403	Biochemistry I	3
MATH 151	Precalculus Mathematics	4
PHYS 201 or PHYS 207	General Physics <sup>1</sup> University Physics I	4-5
PHYS 202 or PHYS 208	General Physics <sup>1</sup> University Physics II	4-5
PSYC 101	Introduction to Psychology	4
SOCY 101	Introduction to Sociology	3
STAT 210	Basic Practice of Statistics	3
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
Total Hours		60-62

<sup>1</sup> MATH 200 is a prerequisite for PHYS 207.

<sup>2</sup> MATH 201 is a prerequisite for PHYS 208.

## Sample curriculum outline

### Freshman year

#### Fall semester

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
MATH 151	Precalculus Mathematics	4
UNIV 111	Focused Inquiry I	3
Term Hours:		15

#### Spring semester

BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
SOCY 101	Introduction to Sociology	3
UNIV 112	Focused Inquiry II	3
Term Hours:		14

### Sophomore year

#### Fall semester

BIOL 300	Cellular and Molecular Biology	3
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
PSYC 101	Introduction to Psychology	4

STAT 210	Basic Practice of Statistics	3
Term Hours:		15

#### Spring semester

CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
Electives or major requirements		11
Term Hours:		16

#### Junior year

##### Fall semester

CHEM 403	Biochemistry I	3
PHYS 201 or PHYS 207	General Physics or University Physics I	4-5
Electives or major requirements		8
Term Hours:		15-16

##### Spring semester

PHYS 202 or PHYS 208	General Physics or University Physics II	4-5
Electives or major requirements		11
Term Hours:		15-16

#### Senior year

##### Fall semester

Credits to complete degree program		30
Term Hours:		30

Total Hours: 120-122

## Total minimum requirement 120 credits

## Preparation for the study of occupational therapy

## Important general information

Students interested in the pre-occupational therapy advising track must complete the necessary prerequisites for the occupational therapy graduate program (a total minimum of 90 credit hours). Many students earn a baccalaureate degree before entering the program. Students interested in occupational therapy should consult with a pre-health academic adviser to learn about requirements that are specific to the program and/or school to which they hope to apply.

Admission to and completion of the pre-occupational therapy program does not constitute admission to VCU's occupational therapy graduate program in the School of Allied Health Professions. Students must apply separately to the occupational therapy program/school of their choice at the appropriate time.

Students with an interest in preparing for the occupational therapy graduate program should declare an academic major while also indicating a pre-occupational therapy advising track. Students do not earn a pre-occupational therapy degree. Students unsure of their academic majors initially should clarify their academic interests through regular conversations with their advisers. Students in the pre-occupational therapy advising track are encouraged to major in fields of greatest interest to them.

## Prerequisites for the occupational therapy graduate program

Students intending to enroll in the occupational therapy graduate program must complete a minimum of 90 credit hours before entering, as well as declaring pre-occupational therapy as an advising track. It is recommended that applicants select a challenging course load of science and math courses each semester to ensure adequate preparation for the academic rigor of the occupational therapy program.

Students need to complete the prerequisite science courses and the Graduate Record Exam before being eligible to start the occupational therapy program in the School of Allied Health Professions at VCU.

In addition to completing the required courses, applicants must also demonstrate evidence of a minimum of 60 observation hours under the supervision of a licensed occupational therapist (in two settings, one with adults and one with children).

## Science and non-science courses required for the occupational therapy graduate program

Students must complete human anatomy (includes the lab) as well as human physiology and the human physiology laboratory. An introductory level biology course is a prerequisite for anatomy and physiology at VCU.

The non-science prerequisites for the occupational therapy program are: English composition, statistics, introduction to psychology and social science courses (must include abnormal psychology and developmental psychology, as well as additional courses in the psychology, sociology or anthropology disciplines).

Students are required to have a basic level of computer competence, the ability to use a personal computer for word processing, email, online bibliographic searches and Internet list-serve discussions. It is also helpful for students to be familiar with presentation and spreadsheet software. A medical terminology course is recommended but not required.

## Additional information for the VCU occupational therapy graduate program

Students enter the graduate program in occupational therapy in early summer. The following prerequisite courses must be completed prior to admission for students entering in the summer semester. If VCU awarded you college credits for your Advanced Placement or International Baccalaureate exams and it is listed on your transcript, these credits will be accepted.

For the following courses, no more than seven years must have lapsed from the course completion to the date of enrollment in the entry-level professional master's degree program in occupational therapy: anatomy, physiology, statistics, developmental psychology and abnormal psychology.

## Prerequisites for the occupational therapy program

### Prerequisite VCU Courses <sup>1</sup>

Select one of the following: <sup>2</sup> 4

BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory
------------------------	---

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
BIOL 205	Basic Human Anatomy (includes lab)	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PSYC 101	Introduction to Psychology (required to take upper level PSYC courses)	4
PSYC 304	Life Span Developmental Psychology	3
PSYC 407	Psychology of the Abnormal	3
STAT 210	Basic Practice of Statistics <sup>3</sup>	3
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Social sciences electives (from PSYC, ANTH and/or SOCY)		9
Additional electives to total 90 credits		47
Total Hours		90

<sup>1</sup> Note that some courses may act as prerequisites to subsequent required courses.

<sup>2</sup> Students need placement into MATH 151 and CHEM 101 in order to enroll in BIOL 151 and/or BIOL 152.

<sup>3</sup> Depending on the math placement test results, students may need to complete MATH 141 before enrolling in STAT 210.

## Total minimum requirement 90 credits Sample curriculum outline

### Freshman year

Fall semester		Hours
PSYC 101	Introduction to Psychology	4
UNIV 111	Focused Inquiry I	3
Electives or major requirements		5
Select one of the following:		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
Term Hours:		16

### Spring semester

BIOL 205	Basic Human Anatomy	4
PSYC 304	Life Span Developmental Psychology	3
STAT 210	Basic Practice of Statistics	3
UNIV 112	Focused Inquiry II	3
Electives or major requirements		2
Term Hours:		15

### Sophomore year

#### Fall semester

PHIS 206	Human Physiology	4
& PHIZ 206	and Human Physiology Laboratory	
PSYC 407	Psychology of the Abnormal	3
UNIV 200	Inquiry and the Craft of Argument	3
Electives or major requirements		5
Term Hours:		15
<b>Spring semester</b>		
Electives or major requirements		12
Social sciences electives (from PSYC, ANTH and/or SOCY)		3
Term Hours:		15
<b>Junior year</b>		
<b>Fall semester</b>		
Electives or major requirements		12
Social sciences electives (from PSYC, ANTH and/or SOCY)		3
Term Hours:		15
<b>Spring semester</b>		
Electives or major requirements		12
Social sciences electives (from PSYC, ANTH and/or SOCY)		3
Term Hours:		15
Total Hours:		91

## Total minimum requirement (for admission to occupational therapy program) 90 credits

## Preparation for the study of pharmacy

### Important general information

Students interested in the pre-pharmacy advising track must complete the necessary prerequisites for pharmacy school (a total minimum of 90 credit hours). Many students earn a baccalaureate degree before entering the program. Students interested in pharmacy school should consult with a pre-health academic adviser to learn about requirements that are specific to the schools of pharmacy to which they hope to apply.

Admission to and completion of a pre-pharmacy program does not constitute admission to VCU's School of Pharmacy. Students must apply separately to the pharmacy school of their choice at the appropriate time.

Students with an interest in preparing for pharmacy school must declare an academic major while also indicating a pre-pharmacy advising track. Students do not earn a pre-pharmacy degree. Students unsure of their academic majors initially should clarify their academic interests through regular conversations with their advisers. Pre-pharmacy students are encouraged to major in fields of greatest interest to them.

### Prerequisites for pharmacy school

Students need to complete their bachelor's degree and the required science courses before being eligible to start the Pharm. D. program at VCU. Students are also required to complete the Pharmacy College Admission Test. The PCAT is taken prior to students applying to pharmacy school and results are weighed heavily in admissions decisions. Students preparing for the PCAT are strongly advised to take courses to build competency in these areas prior to taking the PCAT exam. It is not necessary to have completed all prerequisite course work or to have taken the PCAT prior to submitting your application to pharmacy school. However, you must complete all prerequisite courses and take the PCAT before entering VCU's pharmacy program.

### Science and non-science courses required for pharmacy school

General biology, general chemistry, organic chemistry, physics, human anatomy, human physiology, microbiology and biochemistry are required science prerequisites for admission to pharmacy school.

English composition, calculus, statistics and speech are non-science prerequisites required for pharmacy school.

Other courses, including cell biology, genetics and immunology, human physiology lab and medical microbiology lab, though not required, are strongly recommended for pre-pharmacy students.

VCU's School of Pharmacy also requires the completion of elective credits which can be taken as part of the general education and major requirements in the selected degree program. Due to the importance of a strong biomedical science foundation for success in the Doctor of Pharmacy degree program, some or all of the courses listed below are highly recommended: genetics or molecular biology, immunology, and cell biology. Any of these three courses will count toward elective credit. Other highly recommended electives are anthropology, computer science, economics, history, foreign languages, philosophy, political science, psychology, religious studies and sociology.

The following prerequisite courses must be completed prior to admission for students entering in the fall semester. Courses earned by examination, e.g. Advanced Placement, International Baccalaureate, Cambridge International Examinations or College Level Examination Program, will not be accepted to fulfill prerequisite science and math courses. However, the content area covered by the examination need not be repeated, rather electives in related areas may be substituted for the needed credits. For example, if a student has credit for IB Calculus I, the next level math course can be taken in order to fulfill the math requirement for pharmacy school, i.e., Calculus II.

### Prerequisites for pharmacy school

#### VCU courses

Select one of the following:		4
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	
Select one of the following:		4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
BIOL 201 & BIOZ 201	Human Biology and Human Biology Laboratory	
BIOL 205	Basic Human Anatomy	4
BIOL 209	Medical Microbiology	3
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5

CHEM 403	Biochemistry I	3
MATH 200	Calculus with Analytic Geometry	4
PHIS 206	Human Physiology	3
PHYS 201	General Physics <sup>1</sup>	4-5
or PHYS 207	University Physics I	
SPCH 121	Effective Speech	3
STAT 210	Basic Practice of Statistics	3
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
Additional electives to total 90 credits		30-31
Total Hours		89-91

## Total minimum requirement 90 credits

<sup>1</sup> MATH 200 is a prerequisite for PHYS 207.

Additional electives to total 90 credits (chosen with adviser):  
These courses should be selected to help fulfill the general education and major requirements of the student's degree program. Electives should represent a well-balanced program of courses in the fine arts, humanities and social sciences. Choose anthropology, art history, economics, history, mathematics, philosophy, political science, psychology, religious studies, sociology, social sciences, writing and rhetoric (UNIV 200), foreign languages, literature, music appreciation or computer science. Students may not present studio or activity (physical education) courses.

## Sample curriculum outline

### Freshman year

Fall semester		Hours
CHEM 101	General Chemistry	4
& CHEZ 101	and General Chemistry Laboratory I	
MATH 200	Calculus with Analytic Geometry	4
UNIV 111	Focused Inquiry I	3
Select one of the following:		4
BIOL 151	Introduction to Biological Sciences I	4
& BIOZ 151	and Introduction to Biological Science Laboratory I	
BIOL 101	Biological Concepts	4
& BIOZ 101	and Biological Concepts Laboratory	
Term Hours:		15

### Spring semester

CHEM 102	General Chemistry	4
& CHEZ 102	and General Chemistry Laboratory II	
STAT 210	Basic Practice of Statistics	3
UNIV 112	Focused Inquiry II	3
Select one of the following:		4
BIOL 152	Introduction to Biological Sciences II	4
& BIOZ 152	and Introduction to Biological Science Laboratory II	
BIOL 201	Human Biology	4
& BIOZ 201	and Human Biology Laboratory	
Term Hours:		14

### Sophomore year

Fall semester		Hours
BIOL 205	Basic Human Anatomy	4

CHEM 301	Organic Chemistry	5
& CHEZ 301	and Organic Chemistry Laboratory I	
SPCH 121	Effective Speech	3
Electives or major requirements		3
Term Hours:		15

### Spring semester

CHEM 302	Organic Chemistry	5
& CHEZ 302	and Organic Chemistry Laboratory II	
PHIS 206	Human Physiology	3
BIOL 209	Medical Microbiology	3
Electives or major requirements		5
Term Hours:		16

### Junior year

#### Fall semester

PHYS 201	General Physics	4-5
or PHYS 207	or University Physics I	
Electives or major requirements		11
Term Hours:		15-16

#### Spring semester

CHEM 403	Biochemistry I	3
Electives or major requirements		12
Term Hours:		15
Total Hours:		90-91

## Total minimum requirement (for admission to pharmacy school) 90 credits

## Preparation for the study of physical therapy

## Important general information

Students interested in the pre-physical therapy advising track must obtain a bachelor's degree and complete the necessary prerequisites for the physical therapy doctoral program. Students interested in physical therapy should consult with a pre-health academic adviser to learn about requirements that are specific to the program and/or school to which they hope to apply.

Admission to and completion of the pre-physical therapy advising track does not constitute admission to VCU's physical therapy doctoral program in the School of Allied Health Professions. Students must apply separately to the physical therapy program/school of their choice at the appropriate time.

Students with an interest in preparing for the physical therapy doctoral program should declare an academic major while also indicating a pre-physical therapy advising track. Students do not earn a pre-physical therapy degree. Students unsure of their academic majors initially should clarify their academic interests through regular conversations with their advisers. Students in the pre-physical therapy advising track are encouraged to major in fields of greatest interest to them.

## Prerequisites for the physical therapy doctoral program

Students intending to complete the physical therapy doctoral program must complete a bachelor's degree before entering. It is recommended that applicants select a challenging course load of science and math

courses each semester to ensure adequate preparation for the academic rigor of the physical therapy program.

Students need to complete their bachelor's degrees, the required science prerequisite courses and the Graduate Record Exam before being eligible to start the physical therapy program in the School of Allied Health Professions at VCU.

## Science and non-science courses required for the pre-physical therapy doctoral program

Students must complete 12 semester hours in the biological sciences, including anatomy and physiology, as well as eight hours of chemistry and eight hours of physics.

English composition, precalculus mathematics, statistics, introduction to psychology and one upper-level psychology (abnormal or developmental are preferred) are non-science prerequisites for the physical therapy program.

Although not required, students are strongly urged to complete a cell biology course and a vertebrate histology course.

## Additional information for the VCU physical therapy doctoral program

The following prerequisite courses must be completed prior to admission for students entering in the Fall semester. If VCU has awarded you college credits for your Advanced Placement or International Baccalaureate exams and it is listed on your transcript, these credits will be accepted.

## Prerequisites for the physical therapy doctorate program

### VCU courses

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 205	Basic Human Anatomy (includes lab)	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
MATH 151	Precalculus Mathematics	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PHYS 201 or PHYS 207	General Physics <sup>1</sup> University Physics I	4-5
PHYS 202 or PHYS 208	General Physics <sup>2</sup> University Physics II	4-5
PSYC 101	Introduction to Psychology	4
PSYC 304 or PSYC 407	Life Span Developmental Psychology Psychology of the Abnormal	3
STAT 210	Basic Practice of Statistics	3
Total Hours		42-44

<sup>1</sup> MATH 200 is a prerequisite for PHYS 207.

<sup>2</sup> MATH 201 is a prerequisite for PHYS 208.

## Elective and major requirements to complete degree program 76-78 credits

### Sample curriculum outline

Freshman year		
Fall semester		Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
MATH 151	Precalculus Mathematics	4
UNIV 111	Focused Inquiry I	3
Term Hours:		15
Spring semester		
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
STAT 210	Basic Practice of Statistics	3
UNIV 112	Focused Inquiry II	3
Electives or major requirements		5
Term Hours:		15
Sophomore year		
Fall semester		
BIOL 205	Basic Human Anatomy	4
PSYC 101	Introduction to Psychology	4
Electives or major requirements		7
Term Hours:		15
Spring semester		
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PSYC 304 or PSYC 407	Life Span Developmental Psychology or Psychology of the Abnormal	3
Electives or major requirements		8
Term Hours:		15
Junior year		
Fall semester		
PHYS 201 or PHYS 207	General Physics or University Physics I	4-5
Electives or major requirements		10-11
Term Hours:		14-16
Spring semester		
PHYS 202 or PHYS 208	General Physics or University Physics II	4-5
Electives or major requirements		10-11
Term Hours:		14-16
Senior year		
Fall semester		
Credits to complete degree program		30
Term Hours:		30
Total Hours:		118-122



## Total minimum requirement 120 credits

# Preparation for professional studies in veterinary medicine and optometry

Special advising programs are offered for several graduate and professional programs that are not offered at VCU, such as the study of veterinary medicine and optometry. The academic advisers are knowledgeable about requirements for admission into these programs including the appropriate course work and other credentials required to be competitive for gaining admission.

A Bachelor of Science program offered on the Monroe Park Campus provides excellent opportunities to complete the necessary prerequisites for application to schools of optometry and veterinary medicine. Interested students are encouraged to pursue a broad background in liberal arts, including sciences, humanities and social sciences. The adviser can assist students to identify schools of optometry and veterinary medicine for specific requirements. In general most schools of optometry require a minimum of 90 credits with courses in biological science, general chemistry, organic chemistry, physics, math, English and general psychology. Admission into veterinary schools generally requires a minimum of 90 credit hours with courses in general biology, general chemistry, organic chemistry, physics, biochemistry, math, English and humanities/social sciences.

## Nondegree-seeking students

The UAA advises students admitted to VCU with a “nondegree-seeking” status. Undergraduate nondegree-seeking students who have not previously earned a baccalaureate degree may take a maximum of 11 credit hours per semester. Transient students who are seeking a degree at another institution of higher education may take up to 19 credit hours per semester. The nondegree-seeking student adviser helps these students identify appropriate courses for registration according to their educational goals, and also helps with the registration process.

## Advising after the first year

After the first year and if a student does not fall into one of the special advising populations listed, advising is coordinated through the student’s major program.

### Advising contacts according to major

College of Humanities and Sciences  
(including humanities, sciences and social sciences majors)  
Office of Student Services  
Hibbs Hall, Room 211  
Phone: (804) 827-8211

School of Allied Health Professions  
Department of Clinical Laboratory Sciences  
Randolph Minor Annex, Basement  
301 College Street  
Phone: (804) 828-9469

Department of Radiation Sciences  
West Hospital, 6th Floor, West Wing  
1200 East Broad Street  
Phone: (804) 828-9104

School of the Arts

Art Foundation  
Office of the Director  
Bowe Street Parking Deck, 5th Floor  
609 Bowe Street  
Phone: (804) 828-1129

Other advising  
Contact major department

School of Business  
Office of the Associate Dean for Undergraduate Studies  
Snead Hall  
301 West Franklin Street  
Phone: (804) 828-3710

School of Dentistry  
Division of Dental Hygiene  
Lyons Building  
520 North 12th Street  
P.O. Box 980566  
Phone: (804) 828-9096

School of Education  
Office of the Assistant Dean  
Oliver Hall, Room 2090  
1015 West Main Street  
Phone: (804) 828-3382 or see College of Humanities and Sciences for undergraduate advising within the major

Health, Physical Education and Exercise Science  
Oliver Hall, Room 1037  
1015 West Main Street  
Phone: (804) 828-1948

School of Engineering  
601 West Main Street  
Phone: (804) 828-3925

School of Nursing  
School of Nursing Building, Room 1001  
1100 East Leigh Street  
P.O. Box 980567  
Phone: (804) 828-5171

School of Social Work  
Office of the Director for the B.S.W. Program  
Raleigh Building, Room 103  
1001 West Franklin Street  
Phone: (804) 828-0703

The Honors College  
West Grace Street Student Housing  
701 West Grace Street  
P.O. Box 843010  
Phone: (804) 828-1803

For additional information, visit [academicadvising.vcu.edu](http://academicadvising.vcu.edu) (<http://academicadvising.vcu.edu>).

## Academic advising and learning support courses

University Academic Advising offers several academic advising and learning support courses to students, including Introduction to the University; MINDSET for Academic Success; Education and Career

Planning; Focused Inquiry I and II; Focused Learning in BIOL 151/BIOL 152. These courses support students in achieving academic success.

## Learning support

The university offers the following centers and services as additional support to students.

### Campus Learning Center

A learning and tutoring resource, the Campus Learning Center enhances undergraduate students' academic success at VCU. All CLC services are free for currently enrolled students. Students can schedule both individual and drop-in tutoring sessions in a wide variety of subjects, from courses in business to math and the social sciences.

The CLC also provides Supplemental Instruction, a nationally recognized program that provides learning support from student leaders who work with classroom instructors to make sure each SI session is beneficial. Typical SI offerings include sessions in entry-level sciences and the social sciences. SI offerings change slightly each semester, so students are encouraged to check the website for updated offerings as well as meeting times and locations. Focused learning courses in biology (**UNIV 151** and **UNIV 152**) are graded one- or two-credit courses, which integrate what-to-learn with how-to-learn. Each course is assigned a peer leader who is majoring in biology and has had extensive training in facilitating group study sessions.

The CLC also provides the Campus Testing Center, which offers administration of proctored exams, make-up testing and placement exams. For make-up testing, students must consult with their professors to arrange for tests to be taken in the Campus Testing Center. The professor will then send the exam directly to the test center, and the student will schedule a time to take the exam.

For more information on the Campus Learning Center, visit the **CLC on the Web** or call (804) 827-8108.

### Writing Center

The Writing Center offers free writing assistance for undergraduates, graduate students and faculty from any discipline. Consultants trained in the practice of effective writing and writing instruction offer one-on-one sessions to facilitate writers' work on assignments.

The Writing Center is a collaborative environment designed to help students produce sharper, more critical thinking and a greater sense of audience as they write. Writing Center consultants encourage students to connect with their work, to invest in it and to take better ownership of their thinking and the subsequent writing that they produce. Weak writing is characterized by weak thinking and exacerbated even more by the distance between the writing task and the student writer. Negotiating this distance is hard work made all the more difficult when students labor in isolation. Working with a consultant the Writing Center helps overcome this isolation and helps students to view their work as a meaningful expression of their thinking.

The Writing Center offers appointments as well as assistance on a drop-in basis. Online services are available to students enrolled in distance-learning courses and for students who are otherwise unable to make it to campus for face-to-face consultations.

For more information, visit **the Writing Center** online or call (804) 828-4851.

## Student-athlete support services

The Office of Student Athlete Support Services coordinates academic advising for all student-athletes throughout their enrollment at VCU. This support enhances the opportunities for academic and personal success for student-athletes. The support staff assists students in the development of educational plans, ensures that VCU policies and NCAA rules and regulations regarding academics are being followed, and that students' needs are successfully being met.

The student-athlete adviser helps student-athletes to understand VCU policies, achieve adequate progress toward graduation, overcome academic difficulties, develop future career goals and maintain NCAA eligibility. Optimal educational and personal success is maximized through tutoring services, study hall, a mentoring program and life skills development. All freshmen are required to meet weekly with a team adviser, sophomores meet biweekly and all upperclassmen meet with an adviser at least three times per semester. Student-athletes must meet with their adviser to register for classes each semester.

The Office of Student Athlete Support Services has implemented a unique mentoring program where student-athletes help each other create a strong game plan for success. Each semester, junior and senior student-athletes with a minimum GPA of 3.0 are chosen as mentors. The mentees are freshman student athletes and any other student-athletes in need of intense individual support. The mentors and mentees are required to meet weekly and create detailed academic plans for the coming week. The mentors are required to attend biweekly training with the staff of the Office of Student-Athlete Advising.

## Academic regulations and general degree requirements

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

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

## Advising program

Individual student advising is an integral part of the VCU student's academic program. Each degree-seeking student is assigned an academic adviser who is available for academic advising. Nondegree-seeking students should contact the University Academic Advising Program at (804) 827-UNIV (8648). For definitions of degree- and nondegree-seeking students, refer to the Categories of student enrollment section (p. 50) of this bulletin.

Additional assistance for all students is available from the Counseling Center and University Career Services.

## 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 the student’s mailing address is not accurate, the student should use eServices (<https://my.vcu.edu>) to make changes. Student may also submit any change of address in writing to the Office of Records and Registration, Harris Hall, 1015 Floyd Ave., P.O. Box 842520, Richmond, VA 23284-2520 or the Student Services Center in Harris Hall.

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

Email is considered an official method for communication at VCU because it delivers information in a convenient, timely, cost-effective and environmentally aware manner. Mail sent to the 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 regulations

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.

Instructors must clearly inform the student in the syllabus or in writing of the attendance requirements for each course and the corresponding consequences of poor attendance. 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.

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 end of the first 10 weeks of classes.

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 end of the first 10 weeks of classes or may assign an academic grade at the end. Withdrawals are not permitted after the end of the first 10 weeks of classes. 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).

Student conduct in the classroom

The instructional program at VCU is based upon the premise that students enrolled in a class 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 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. Disruptive behavior on the part of the student may result in the filing of formal charges under the university’s Rules and Procedures document.

Classification of students

Academic programs

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

Freshmen	1 to 23 credit hours
Sophomores	24 to 53 credit hours
Juniors	54 to 84 credit hours
Seniors	85 credit hours and more

Health science programs

Classification is determined by curriculum requirements for individual programs.

Categories of student enrollment

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

Degree-seeking student

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

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

1. **As a declared major in a school or college.** The student who declares a specific major when entering VCU begins a course of study leading to a degree in the declared major. (The student may change the major at a later date.)
2. **As a pre-health major.** The student declares a pre-health major (clinical laboratory sciences, dental hygiene, nursing or clinical radiation sciences) and completes the prerequisites for future eligibility to apply for admission into the health science major. Completion of the pre-health major does not guarantee admission into the desired health sciences program. Pre-health majors are not degree-granting programs. Students should consult the program admission requirements for the intended program they wish to pursue.
3. **As an undeclared student.** Students who have not selected a specific major, may select the “undeclared” category. Students are advised through University Academic Advising using general academic lines so they may enroll in courses that will assist them in more clearly defining their academic or career objectives.

The advising program is flexible enough to suit the interest of any student, yet it is basic to a number of fields of study in different schools. During the first year of study, students are encouraged to investigate various fields until they find a major that suits their interests, needs and goals. Resources are available from University Career Services and through UNIV 103.

Students must define these goals and declare a major area of study no later than the semester in which they complete 60 credits, generally after two years of study.

## Nondegree-seeking student

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

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

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

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

1. **As a nondegree holder.** This student has not previously earned a baccalaureate degree. The student may take a maximum of 11 credits per semester (part time).
2. **As a degree holder.** This student has previously earned a baccalaureate degree at VCU or another accredited institution and plans to pursue additional undergraduate course work. The student may take a maximum of 19 credits per semester.
3. **As a transient student.** This student is presently seeking a baccalaureate degree at another institution of higher education, is in good standing at that institution and plans to pursue a course of study at VCU for no more than two semesters with the intent of

transferring the work back to the home institution to complete the degree. The student may take a maximum of 19 credits per semester and must present a letter from the home institution approving the student's status as a transient student at VCU. (Refer to the Nondegree-seeking student guidelines section of this bulletin).

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

## Nondegree-seeking student advising

Nondegree holders or degree holders who wish to take undergraduate classes are advised through University Academic Advising. Nondegree-seeking students must meet eligibility requirements (see Nondegree-seeking student guidelines (p. 51) section of this bulletin), are limited to a maximum of 11 credits per semester and are not eligible for financial aid. Nondegree-seeking degree holders (those students who already hold a baccalaureate degree) may take more than 11 credits, but also are not eligible for financial aid. Academic advisers assist nondegree-seeking students by providing educational planning and information about university resources and regulations. Nondegree-seeking degree holders who wish to register for graduate courses need to contact the specific academic department for advising. UAA is located in Hibbs Hall, 900 Park Ave., First Floor, P.O. Box 842002, Richmond, VA 23284-2002. Phone: (804) 827-8648. Fax: (804) 827-4511.

## Nondegree-seeking student guidelines

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

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

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

The first time a student registers as a nondegree-seeking student, proof of eligibility is required. Students must provide a signed Certificate of Eligibility form, which is available online at Records and Registration



Forms (<http://rar.vcu.edu/forms>). A student also may establish eligibility by providing verification of high school graduation, GED certification or verification that he or she is eligible to return to the previous institution of study.

If the student's eligibility cannot be verified or if the student is found ineligible, the grade on the course taken is changed to no credit (NC). An administrative hold is placed on future registrations until eligibility is established.

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

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

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

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

## Registration policies

### Continuous enrollment

Students who withdraw from all courses after the first week of the semester are considered to have been enrolled for the semester. Students who do not attend VCU for three or more successive semesters excluding summer sessions must submit an application for readmission to the Office of Undergraduate Admissions. See the Undergraduate Readmission/Continuous Enrollment Chart (p. 24) for details on readmission and continuous enrollment. Students who have attended another institution and wish to return after the allowable absence period or who have been suspended since their last enrollment at VCU also must apply for readmission. This application must be completed and turned in before the application submission date for the semester in which the student plans to return. For health science programs, breaks in enrollment must be approved by the department.

### Student load

Student load is the total number of credits for which a student is enrolled in any one semester. The semester credit is the quantitative unit by which courses are measured and is defined by the number of credit hours as found under general course information (p. 56).

### Full-time and part-time students

A student enrolled in 12 credits or more during any fall or spring semester is classified as full time. A student enrolled in 11 credits or less during any semester is classified as part time. Both full-time and part-time students may seek degrees at VCU. However, some curricula may require

full-time status. For more information, see the Categories of student enrollment section of this bulletin.

### Academic overload

A degree-seeking undergraduate student may take no more than 19 credits per semester without special permission. This maximum load excludes holiday intersession courses. More than 19 credits per semester constitute an academic overload and will incur course overload fees. Health science curricula requiring more than 19 credits per semester are exempt from this rule. See additional information on a course overload in the "Tuition and fees charges (p. 26)" section of this chapter.

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

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

For information about credits earned concurrently at another institution, see Concurrent Registration below.

### Credits allowable during summer sessions

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

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

### Prerequisite enforcement

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

### Audit registration

Class size permitting, a student may register for a course on an audit basis. A student may register for audit only during add/drop and late registration periods. Auditing a course means a student enrolls in a course but does not receive academic credit upon completion of the course. A student who registers on an audit basis is subject to attendance regulations of that class and may be administratively withdrawn by an instructor for a violation of class requirements for



audit students, before or after the normal 10-week withdrawal deadline. A student who registers for audit may be subject to other course requirements at the discretion of the instructor. Audit students are charged the regular rate of tuition and fees. An audit course is counted as part of the student's semester load for the purposes of full- or part-time enrollment status but not for the purpose of financial aid.

## Concurrent registration

Students enrolled in degree programs need prior approval to take courses at other institutions to ensure credits earned concurrently at another institution are accepted for transfer at VCU. Before registration at the other institution, the student needs approval by his or her adviser, department chair, program head and academic dean. A Request to Take Courses at Another Institution form may be obtained from the Student Services Center in Harris Hall or online at Records and Registration Forms (<http://rar.vcu.edu/forms>). Credits taken at another institution will not be counted toward enrollment level for financial aid purposes at VCU unless these courses are part of an approved articulation agreement that allows or requires courses to be taken at another institution.

## Change in registration

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

## Cancellation of registration

Cancellation of registration must be completed before the end of the add/drop period. To cancel registration, a student must drop all classes using one of the following methods: 1) in writing to the Office of Records and Registration, 2) in person at the Student Services Center or 3) via eServices (<https://my.vcu.edu>). Refunds are issued in accordance with procedures described under the refunds section in the "Tuition, fees and expenses (p. 26)" section of this bulletin. For readmission guidelines, consult the "Admission to the university (p. 13)" section of this bulletin.

## During the add/drop period

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

## After the add/drop period

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

Drops are not permitted after the add/drop period has ended. However, students may withdraw from classes in accordance with prescribed procedures. To officially withdraw from a class, a student must obtain

and file the appropriate form with the Office of Records and Registration or utilize eServices.

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

For further information see Withdrawal from the university below. Students who withdraw from a course may be entitled to a refund. See the University refund policy in the "Tuition, fees and expense" section of this bulletin.

## Evening studies

VCU day and evening programs are academically integrated, and credit earned in the evening program is identical to credit earned during the day. A student may register for courses in the evening as a degree-seeking or a nondegree-seeking student.

## Withdrawal from the university

Students enrolled in health science programs should refer to school guidelines. Withdrawal may affect continuance in health science curricula.

Students who withdraw from all classes during a semester must notify, in writing, the Office of Records and Registration before the end of the first 10 weeks of classes. Monroe Park Campus students may withdraw from all classes using eServices by the end of the first 10 weeks of classes. Failure to notify the Office of Records and Registration of intention to withdraw from all classes or to withdraw from all classes using eServices can result in the assignment of failing grades in all or some of the courses. The final withdrawal date for classes whose meeting dates do not conform to the semester calendar is the day when half of the course has been completed. Forms to withdraw from courses are available at the Student Services Center in Harris Hall or online at Records and Registration Forms (<http://rar.vcu.edu/forms>).

A mark of W for withdrawn will appear on the student's academic record for all courses. Charges are assessed and adjusted according to the University Refund Policy. See the University refund policy in the "Tuition, fees and expenses" section of this bulletin.

When extraordinary circumstances require that a student requests withdrawal after the final withdrawal date, the student must petition the Academic Regulations Appeals Committee for consideration of a waiver of this academic regulation. For further information, see the Appeal to waive an academic regulation, Academic Regulations Appeals Committee section of this bulletin.

Monroe Park Campus students who withdraw from all courses during a semester may attend the following semester without submitting an application for readmission. **MCV Campus students should consult their program adviser prior to any withdrawals for academic or health-related reasons.**

Also see Cancellation of registration above.

## Medical withdrawal

A student may experience a medical condition that makes him or her unable to complete their studies once a semester is in progress. If this occurs before the add/drop period is over then the student should drop the class, and if it occurs after add/drop ends but before the last day to

withdraw, then the student should withdraw from the class. This should be done using eServices or, if necessary, the dean's office can assist with a drop or a withdrawal.

After the last day to withdraw but prior to the last day of classes per the academic calendar, the student may petition the dean (or dean's designee) for a medical withdrawal from all courses. The student must present documentation of his or her medical condition that establishes a significant degree of impairment in continuing his or her studies. This documentation must include a letter, written on a letterhead, from a licensed health care provider that establishes the dates of treatment, the diagnosis and the degree of impairment that the condition has created. This letter should also provide the date when the student became unable to attend classes, or when the impairment was considered significant enough to affect academic performance. The dean (or dean's designee) may at his or her discretion determine whether a medical withdrawal from all courses is appropriate. A medical withdrawal may only be granted for all courses taken that semester.

The student's transcript will reflect a grade of W for all courses taken that semester. No special designation for medical withdrawals is made on the transcript, and tuition and fees are levied in the same manner as other withdrawals. (See University refund policy (p. 26) section. (<http://www.pubapps.vcu.edu/Bulletins/undergraduate/?uid=10096&iid=30703>)) Medical withdrawals may impact future financial aid in relation to Satisfactory Academic Progress (<http://www.enrollment.vcu.edu/finaid/progress.html>).

If the student wishes to be withdrawn from selected courses only, or if the dean (or dean's designee) denies the petition, or if the request is made after the last day of classes per the academic calendar, then the student may pursue the matter further by filing a petition for a retroactive withdrawal with the Academic Regulations Appeals Committee (p. 63).

## Degree options

### Major

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

The major becomes official only after the Office of Records and Registration has received the Change of Major/Minor Form approved by the appropriate school dean, department chair or program head. The major will appear on the student's permanent record at the time of graduation.

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

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

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

### Concentration

A concentration is a set of courses that provides structured study in a topic within the major. Concentrations require a minimum of nine credits, with a normal maximum of 15 credits. The department or program administering the concentration specifies required and optional courses. The concentration may be used to fulfill career needs or to facilitate in-depth investigation in a topic related to an area of interest to the student. The concentration becomes official only after the Office of Records and Registration has received the Change of Major/Concentration Form approved by the appropriate school dean, department chair or program head. A concentration will appear on the student's permanent record at the time of graduation. All courses in the concentration must be completed before graduation with a bachelor's degree.

### Double major

A double major is the concurrent fulfillment of the requirements of two majors. To earn a degree with two majors, the student must complete the courses required in each major, any collateral/prerequisite courses required for both majors and the general education requirements, including the University Core curriculum, of the primary major.

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

The double major becomes official only after the Office of Records and Registration has received the Change of Major/Concentration Form approved by the appropriate school dean, department chair or program head.

### Dual degrees

Dual degrees are the concurrent fulfillment of the requirements of two majors and two degrees. To earn dual degrees, the student must fulfill all the requirements of the degree programs in both majors, the general education requirements of the primary degree, including the University Core curriculum, and complete an additional 30 credit hours above the minimum hour degree requirement of the primary degree.

### Second baccalaureate degree

A student who already has earned a baccalaureate degree from VCU or another institution and wishes to earn a second baccalaureate degree at VCU must complete the admissions process outlined in the "Admission to the University (p. 13)" chapter of this bulletin.

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

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

In addition, students must meet the degree requirements for all undergraduate students (p. 55) as found in this section of the bulletin.

## Minor

A minor is a set of courses analogous to and named for an existing major or discipline, or an interdisciplinary grouping of courses not represented by a major. Although a minor is not required for completion of most degree programs, a student may elect an approved minor. Minors require a minimum of 18 credits, with a normal maximum of 21 credits. Unless approved by the University Undergraduate Curriculum Committee, at least nine of the credits in a minor must be in 300-level or higher courses, unless a greater number is specified. Students must achieve a minimum GPA of 2.0 in designated course work in order to earn the minor. The department or program administering the minor specifies required and optional courses. The minor may be used to fulfill career needs or to facilitate in-depth investigation in a discipline of secondary interest to the student.

The minor becomes official only after the Office of Records and Registration has received approval from the appropriate school dean, department chair or program head. A student cannot minor in a discipline identical to the major. A minor will appear on the student's permanent record at the time of graduation if the student has completed all requirements for the minor and approval has been granted by the appropriate school dean, department chair, program head or designee. All courses in the minor must be completed before graduation with a bachelor's degree.

## Change of academic program (major, concentration, minor)

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

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

Students currently enrolled in an MCV Campus program who wish to change to a curriculum on the Monroe Park Campus should follow the process mentioned above. Such students are subject to the continuance policy of the Monroe Park Campus after the academic program change has occurred. Students currently enrolled in an MCV Campus undergraduate program who wish to change to another MCV

Campus undergraduate curriculum must go through the admission process outlined in the "Admission to the University" chapter of this bulletin.

Undergraduate degree-seeking students who wish to enter a graduate or professional program must go through the admission processes outlined in the Graduate or Professional Programs bulletins online. Students enrolled in a graduate or professional program of study at VCU who wish to return to a previous undergraduate program in which a degree has not been awarded may do so through a change in academic program as outlined above. Such students should consult the Graduate or Professional Programs bulletins regarding the process for withdrawing from their current graduate or professional program of study. If a degree already has been awarded in an undergraduate program of study, graduate or professional students must go through the admission process to re-enter an undergraduate program as outlined in the "Admission to the University" chapter of this bulletin.

Nondegree-seeking students intending to enter a degree-seeking status must go through the admission process outlined in the "Admission to the University" chapter of this bulletin or the admission processes outlined in the Graduate or Professional Programs bulletins online.

## Degree requirements for all undergraduate students

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

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

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.

## 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) 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.

## Upper-level courses

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

## GPA requirement

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

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

## Major area GPA

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

## Total credits

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

## 25 percent rule

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

During a student's last 45 credits at VCU, transfer credits attempted elsewhere must be approved in advance by the appropriate school dean, department chair or program head via the "Request to Take Courses at Another Institution" form, available online at Records and Registration Forms (<http://rar.vcu.edu/forms>).

This requirement does not apply to students who participate in VCU-sponsored programs abroad or who earn course credit at a cooperating university through VCU domestic and international university exchanges or who are pursuing an undergraduate certificate independently of a baccalaureate degree.

## General 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

Courses 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

Courses 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 4XX courses for prerequisite work. Graduate programs can require that 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 – First year, first-professional (dentistry, medicine, pharmacy and physical therapy) courses

Normally open to students enrolled in the D.D.S., D.P.T., M.D. 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: second year, first-professional [dentistry, medicine, pharmacy and physical therapy (second and third year)] courses normally open only to students enrolled in the D.D.S., M.D. and Pharm.D. programs. Certain courses of this group may be designated by the department and approved by the Graduate Council for graduate credit.

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

## Course interpretation

A single-number listing for a course, such as HIST 101, indicates it is a one-semester course and may be offered each semester or only one semester each year.

Courses listed with a double number, such as HIST 201, 202, are designated as semester courses. They consist of two one-semester courses either of which may be taken without the other.

Courses listed with a double number, such as CHEM 101-102, are designated as a continuous course. They consist of two one-semester courses, the first of which can be taken without the second, but the second of which cannot be taken without the successful completion of the first.

Course abbreviations ending in Z denote credit-bearing laboratories.

The university reserves the right to withdraw any course or program.

## Grading and marking system

### Evaluation and final grade reports

Students are encouraged to discuss their progress in courses with their instructors, especially before the withdrawal deadline.

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 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 must be filed with the Academic Regulations Appeals Committee within three years of the semester of enrollment.

Grades are available via the Web through eServices (<https://my.vcu.edu>).

## Grades and grade points

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. These letter grades and their respective meaning and grade-point values follow:

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	(-)
PR	Progress	(-)
TR	Transfer Credit	(-)
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.

The above scale 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.

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.



**Mark of audit (AU)**

Courses assigned the AU grade 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 reregister for the course in the following semester. Upon departmental notification, CO marks for courses not reregistered 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 grade will not be computed into the GPA and do not result in earned credit hours.

**Mark of credit (CR)**

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

**Mark of honors (H)**

Courses assigned the H grade 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 at the end of the semester, the student may request the instructor to assign the mark of I for that semester. If in agreement with this request, the instructor fills out an Incomplete Grade Assignment Form bearing the student's signature. A grade cannot be changed to I after the deadline for grade submissions.

All work must be completed and submitted in time to allow the instructor to evaluate the work and submit a grade to the department no later than 30 calendar days after the beginning of the next semester. Incompletes assigned in a fall semester must be converted within 30 calendar days of the beginning of the spring semester. Incompletes assigned in the spring semester or summer session must be converted within 30 calendar days of the beginning of the fall semester.

Courses assigned the I grade will not be computed into the GPA. Upon expiration of the deadline, an FI will be given automatically for any incomplete that has not been changed to a grade.

**Mark of incomplete military (IM)**

See the Defense crisis tuition relief, refund and reinstatement guidelines in the "Tuition, fees and expenses" section of this bulletin. Courses assigned the IM grade will not be computed into the GPA.

**Mark of marginal (M)**

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

**Mark of pass (P)**

The mark of P may be assigned only in courses approved for such grading. This grade denotes satisfactory completion of course requirements. If course requirements are not met satisfactorily, a grade of F is assigned. Courses assigned the grade of P are not computed in the GPA. However, courses assigned the grade of F are computed in the GPA.

**Mark of progress (PR)**

A PR is assigned as an interim grade for certain continuing course requirements that run over the grade reporting periods. The mark of PR may be assigned only in courses approved for such grading. Courses assigned the PR grade 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 nonattendance. 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 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 grade will not be computed into the GPA. For further information see the Withdrawal from the university section of this bulletin.

**Mark of withdrawn military (WM)**

Courses assigned the WM grade will not be computed into the GPA. See the Defense crisis tuition relief, refund and reinstatement guidelines in the "Tuition, fees and expenses" section of this bulletin.

**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.

VCU has three program levels: undergraduate, graduate and professional. Each program level has a cumulative GPA. If you enroll in multiple programs at the same degree level, your GPA for the multiple programs will be merged. For example, if you graduate from an undergraduate program at VCU and pursue a second undergraduate program at VCU, you will have one continuous GPA.

**Repeated courses**

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

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

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

In the case of courses that are no longer offered at VCU, students may take the established equivalent course at VCU and file the Historical Repeat Course Option form as described in the previous paragraph.

The grade is not excluded until the request is made. If, however, more than one D or F grade is received in the same course or its equivalent

course, only one of these grades will be excluded from the computation of the cumulative GPA.

Grades for all attempted courses remain on the student's permanent record. Students may not repeat courses for which they have previously received transfer credit. A repeated course may be counted only once toward credits necessary for graduation. Before repeating a course, the student should consult with the adviser, department chair or program head.

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

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

## Grade exclusion policy

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

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

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

All earned grades, including those excluded D and F grades, remain on the student's academic record. Excluded grades must be approved by the student's major department chair and by the dean of the school.

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

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

## Change of grade

A final grade may be corrected by the faculty member with proper submission of the Change of Grade Form to the chair of the department in which the course was taught. The chair will forward the form to the school's dean, who will send it to the Office of Records and Registration. For grades awarded in the fall semester, the change of grade must be

submitted by the department chair no later than 30 calendar days after the beginning of the following spring semester. For grades awarded in the spring semester or summer, the change must be submitted no later than 30 days after the beginning of the following fall semester. However, a change of grade that affects the student's academic eligibility to enroll must be made during the add/drop period in the semester or summer session in which the student plans to continue attendance.

## Grade review procedure

Undergraduate and graduate students of VCU 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)<sup>1</sup> 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.

<sup>1</sup> In 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 non-voting 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.

## Transcripts

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

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

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

Transcript requests signed by the student may be submitted in person at the Student Services Center in Harris Hall, 1015 Floyd Ave., in Room 1100; or requests may be submitted by mail to the Office of Records and Registration, P.O. Box 842520, Richmond, VA 23284-2520. Students and recent alumni may request an official transcript and pay by credit card by logging in to eServices and following the links to "Student/Student Records."

## Degree Works

This computerized report tracks the completion of a student's declared degree by course and requirement. It outlines in concise form the university core, general education, major, collateral requirements and electives for a student's degree program (and concentration), and the way in which the student is completing those requirements. This report is not intended to replace contact with academic advisers. It will, however, provide accurate, up-to-date information to assist students and advisers in making wise academic choices.

## Continuance in academic programs

### Monroe Park Campus programs

#### Definition of good standing

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

#### Academic warning

A student is placed on academic warning when the student's cumulative GPA falls below 2.0 (grade C) at the conclusion of any semester of attendance — fall, spring or summer. Notification of warning appears on the student's academic record. A degree-seeking student on academic warning may not enroll in more than 14 credits per semester of attendance except under unusual circumstances and with the permission of the dean or designee of the school or college in which the student is enrolled. A nondegree-seeking student on academic warning may not enroll for more than 11 credits per semester of attendance. A student remains on academic warning for one semester of attendance, at the end of which time the student must obtain a cumulative GPA of at least 2.0. Failure to achieve this GPA results in academic probation.

## Academic probation

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

A degree-seeking student on academic probation may not enroll in more than 13 credits per semester of attendance. A nondegree-seeking student on academic probation may not enroll in more than 11 credits per semester of attendance. Students on academic probation are expected to improve their cumulative GPA by achieving a semester GPA of 2.0 or better during each semester of attendance. A student who achieves a cumulative GPA of at least 2.0 is removed from academic probation. Failure to achieve a 2.0 semester GPA while on probation results in academic suspension.

## Academic suspension

A student is placed on academic suspension when the student's cumulative GPA is below 2.0 for two successive semesters and the following semester of attendance GPA falls below 2.0.

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

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

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

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

For Readmission guidelines, see the "Admission to the University" section of this bulletin.

## MCV Campus programs

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



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

## 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 and the VCU Honor Code, 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. VCU recognizes its responsibilities to the health professions and to the consumer of health services. 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 legal standards regarding conduct of one person toward society, i.e., stealing, lying, cheating and slander
3. Conviction of a felony involving moral turpitude

## Graduation process

### Graduation application

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

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

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

- Complete the Apply to Graduate procedure on eServices (<https://my.vcu.edu>). The Undergraduate Graduation Application will be provided during this process. **If a student is graduating from more than one program (ex. dual or double degree program), they must complete the entire graduation checkout process through eServices for each program. The student's department will be notified once all steps are completed.**
- Complete the Undergraduate Graduation Application according to the instructions provided. (These forms are provided in PDF format so that students can complete the forms online and print them. Adobe Acrobat Reader is required.) A separate set of graduation forms must be completed and submitted for each program from which students intend to graduate.

**No degrees will be conferred unless students apply to graduate.**

Degrees will be awarded and diplomas issued in a current semester only. Students who do not complete the graduation checkout process in the semester in which they actually complete their programs will be awarded their degrees in the semester in which they apply to graduate. In such cases, a text notation will be added to the transcript to indicate the date that course work for the degree was completed.

## Graduation checklist

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

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

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

## Graduating with honors

### Dean's list

The dean's list is a recognition of superior academic performance. A student is automatically placed on the dean's list for each semester in which a semester GPA of at least 3.5 is attained, based on a minimum



of 12 semester credits, excluding courses graded credit/noncredit, with no grade below C. A notation is placed on the student's academic record. Students earning marks of I or PR are ineligible for the dean's list for the semester in which these grades were earned.

## Laudatory honors

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

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

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

## Special notes for graduating financial aid recipients

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

## Exit counseling required

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

## Awarding degrees posthumously

Recipients for posthumous degrees should meet the following conditions:

- The student was in good academic standing at the time of his or her death.
- 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.

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.

## Commencement participation policy

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

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

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

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

## Appeal to waive an academic regulation, Academic Regulations Appeals Committee

The Academic Regulations Appeals Committee considers appeals for exceptions to undergraduate program academic regulations listed in this bulletin. The committee — composed of faculty and administrators from each school and the college, and representatives from the Division of Strategic Enrollment Management and the Office of Disability Support Services — is a standing committee of the Office of Academic Affairs.

Undergraduate students who wish to petition the university for a waiver of the regulations in this bulletin may do so through the Academic Regulations Appeals Committee. Students who have been accepted to the graduate portion of a five-year bachelor's/master's program may also need to make an appeal through the Graduate School. Examples of typical petitions are requests for retroactive withdrawal, waiver of the continuance policy following a suspension or a waiver of the rule requiring that the last 25 percent of a program be earned in residence at VCU. Students may petition for a past semester within three years, but cannot ask for waivers after having graduated. In exceptional circumstances any member of the Academic Regulations Appeal Committee and/or academic dean may refer a case to the provost who has the right but not the obligation to consider remanding it back to the committee for further review.

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

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

Since a request to waive a regulation is itself an appeal, committee decisions are final, and there is no further appeal within the university. However, if new documentable information is provided, petitions may be brought back before the committee. A rewritten student letter does not constitute new documentation. The representative will request that the petition be reheard based upon the new information and the committee will vote on that request.

Certain exceptions may affect current and future financial aid. Students should consult with a financial aid staff member before submitting an appeal.

## 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 online at [opds.vcu.edu/consumer-info](http://opds.vcu.edu/consumer-info) (<http://www.opds.vcu.edu/consumer-info>) 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.

## Contacts

### Office of Academic Affairs

Ginter House  
901 West Franklin Street  
P.O. Box 842527  
Richmond, Virginia 23284-2527  
Phone: (804) 828-6162  
Fax: (804) 828-1887  
[provost.vcu.edu](http://provost.vcu.edu) (<http://provost.vcu.edu>)

### University Academic Advising

Hibbs Hall, First Floor  
900 Park Avenue  
P.O. Box 842532  
Richmond, Virginia 23284-2532  
Phone: (804) 827-8648  
Fax: (804) 828-4511  
[academicadvising.vcu.edu](http://academicadvising.vcu.edu) (<http://academicadvising.vcu.edu>)

### Office of Records and Registration

Grace E. Harris Hall  
1015 Floyd Avenue  
P.O. Box 842520  
Richmond, Virginia 23284-2520  
Phone: (804) 828-1349  
Fax: (804) 828-8121  
[rar.vcu.edu](http://rar.vcu.edu) (<http://rar.vcu.edu>)

## Core curriculum

The VCU Core Education Program provides a compact between VCU and its students. The university pledges to provide opportunities for students to improve their oral and written communication competency, to develop their critical thinking abilities, to improve their ability to work collaboratively on projects, to attain information fluency, to achieve quantitative literacy and to understand ethical perspectives and civic responsibilities in the 21st century.

Along with an emphasis on student-centered learning, the primary goals of the Core Education Program are to:

1. Improve students' levels of competencies in all skill areas.
2. Blend knowledge and skills from different disciplinary areas into one integrated experience.
3. Encourage and promote student engagement in present and future learning.

**Mission of the Core:** By providing shared learning experiences, the Core Education Program helps students develop competencies necessary for lifelong success.

The Core Education Program consists of 21 credit hours intended to be completed by the end of the sophomore year. Individual schools determine all other curricular requirements for their programs of study. For substitutions to the Core Education Program, please consult first with your academic adviser. Final approval occurs within the appropriate college, school or department.

All VCU students are required to take UNIV 111, UNIV 112 and UNIV 200. A minimum grade of C is required in UNIV 112 and UNIV 200. Transfer credits are not accepted for these three UNIV courses after a student is enrolled at the university.

The Core Education Program includes three tiers.

## Tier I

Six credit hours: UNIV 111 and UNIV 112: This two-semester sequence is required of all first-year students and provides the foundation of the Core Education Program. A minimum grade of C is required in UNIV 112. Students begin their Core shared experiences through the Common Book initiative with follow-through in the FI sequence as they engage in similar assignments and projects both in and out of class.

## Tier II

As a complement to the first tier, Tier II courses reinforce the learning objectives introduced in the Focused Inquiry sequence. Courses in this tier are drawn from across the university and include:

1. Three to four credit hours – a **quantitative literacy** course from the following approved list:

MATH 131	Introduction to Contemporary Mathematics	3
MATH 141	Algebra with Applications	3
MATH 151	Precalculus Mathematics	4
MATH 200	Calculus with Analytic Geometry	4
SCMA 171	Mathematical Applications for Business	3
SCMA 212	Differential Calculus and Optimization for Business	3
SCMA 301	Business Statistics I	3
STAT 208	Statistical Thinking	3

### Option for School of the Arts programs only (three-course sequence)

MATH 121	Perspective Geometry	1
MATH 122	Tessellations	1
MATH 123	Visualization	1

### Option for Honors College only

MATH 230	Mathematics in Civilization	3
----------	-----------------------------	---

2. Three credit hours – a **research and academic writing** course that emphasizes academic argument, information retrieval, analysis and documentation. A minimum grade of C is required.

UNIV 200	Inquiry and the Craft of Argument	3
----------	-----------------------------------	---

### Option for Honors College only

HONR 200	Rhetoric	3
----------	----------	---

### Option for clinical radiation sciences program only (two courses)

CLRS 390	Research Methods in the Radiation Sciences	2
CLRS 398	Introduction to Research	1

3. Three credit hours – a **humanities/fine arts** course from the following approved list:

AFAM 111	Introduction to Africana Studies	3
ENGL 215	Textual Analysis	3
HIST 201	The Art of Historical Detection: ____	3
HUMS 250	Reading Film	3
MASC/INTL 151	Global Communications	3
PHIL 201	Critical Thinking About Moral Problems	3

PHIL 250	Thinking About Thinking	3
RELS 108	Human Spirituality	3
UNIV 213	The Truth About Lying	3
UNIV 217	Finding Your Voice in Contemporary Society	3
UNIV 299	What's the Big Idea?	3
WRLD/INTL 203	Cultural Texts and Contexts: ____	3
WRLD 230	Introduction to World Cinema	3
Option for Honors College only		
PHIL 230	Reason, Science and the Self	3

4. Three to four credit hours – a **social/behavioral sciences** course from the following approved list:

ANTH/INTL 103	Introduction to Anthropology	3
ECON 101/INTL 102	Introduction to Political Economy	3
GSWS 201	Introduction to Gender, Sexuality and Women's Studies	3
HUMS 300	Great Questions of the Social Sciences	3
INTL 101	Human Societies and Globalization	3
POLI 103	U.S. Government	3
POLI/INTL 105	International Relations	3
PSYC 101	Introduction to Psychology	4
SCTS 200	Science in Society: Values, Ethics and Politics	3
SLWK 200	Building a Just Society	3
SOCY 101	Introduction to Sociology	3
UNIV 211	Food for Thought	3
UNIV 222	Pseudoscience	3

### Option for Honors College only

INTL/POLI 365	International Political Economy	3
---------------	---------------------------------	---

5. Three to four credit hours – a **natural/physical sciences** course from the following approved list:

BIOL 101	Biological Concepts	3
BIOL/ENVS 103	Environmental Science	4
CHEM 110	Chemistry and Society	3
ENVS 201	Earth System Science	3
FRSC 202	Crime and Science	3
INSC 201	Energy!	3
PHYS 103	Elementary Astronomy	3

### Option for Honors College only

PHYS 215	Science, Technology and Society	3
----------	---------------------------------	---

## Tier III

The third tier culminates in a capstone experience integrating the Core Education Program with the student's major. This requirement, as determined by the major, may be fulfilled through a service-learning project, a research project with a faculty member, a study-abroad program, a senior thesis paper, a practical internship or a major-specific capstone course. This requirement ties learned experience in the Core Education Program with a practical application in the major.

## Effective bulletin

The Undergraduate bulletin documents the official admission and academic rules and regulations that govern education in the undergraduate degree programs at VCU. In-depth descriptions of each undergraduate degree program are provided in the individual school and program sections of this bulletin, available in PDF format. Updates to the online bulletin are made throughout the year, while the bulletin archives contain the PDFs that serve as effective bulletins for enrolled students.

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) 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.

The contents of this bulletin represent the most current information available at the time of publication. However, during the period of time covered by this bulletin, it is reasonable to expect changes to be made with respect to this information without prior notice. Thus, the provisions of this bulletin are not to be regarded as an irrevocable contract between the university (or any of its divisions) and the student.

All rules and regulations set forth in this bulletin will apply until further notice. The university reserves the right to make changes including, but not limited to, changes in courses of study, fees, rules, regulations, programs, faculty and staff, and classification of students, whenever university authorities, in their sole discretion, deem it appropriate, expedient or wise to do so.

## Accelerated bachelor's-to-master's programs

VCU offers a number of accelerated bachelor's-to-master's degree programs in which highly qualified undergraduate students can earn both degrees in a minimum of five years by taking approved graduate-level courses during the senior year of their undergraduate programs. Accelerated bachelor's-to-master's degree programs must be approved by both the University Undergraduate Curriculum Committee and the University Graduate Council. Program descriptions for all accelerated programs are included in the archived bulletin and are also accessible by using the program search function of the online bulletin website.

Undergraduates who are interested and qualified for admission to accelerated programs must apply for admission to graduate study and be accepted before they begin the equivalent of the senior year of undergraduate study. Once accepted, they may enroll in the shared graduate course work identified in the approved curriculum (or in the

student's plan of study that must be approved at the time of admission). Graduate 600-level course work that has not been identified as part of the shared course work should not be taken until the shared graduate course work has been completed and the student's status has changed from undergraduate to graduate. No 600-level graduate course work may be taken before the senior year. No undergraduate course work may be counted toward the master's degree.

Students in accelerated bachelor's-to-master's programs who receive grades of C or below in the shared graduate course work identified in the approved curriculum (or the student's plan of study approved at the time of admission) must be reviewed for possible termination from the accelerated program as well as the graduate degree program, if applicable. If allowed to continue in the accelerated program, the grades received in these courses will be counted toward both the undergraduate and graduate degree programs and in the calculation of both the undergraduate and graduate grade-point averages. Substitutions for any of the shared graduate course work must be approved by the undergraduate and graduate advisers before the last day of add/drop registration of the semester in which the student wishes to take the substituted course(s).

## New students and family programs

Hibbs Hall, Room 201  
900 Park Avenue  
P.O. Box 849079  
Richmond, Virginia 23284-9079  
Phone: (804) 828-3700  
[nsfp.vcu.edu](http://nsfp.vcu.edu) (<http://nsfp.vcu.edu>)

The Office of New Student and Family Programs provides new students and their families with resources and programming to support the academic experience, helping students make a smooth transition to university life, offering new-student programs throughout the year and providing services to keep families and students connected to campus resources.

## New Student Orientation

VCU offers an orientation program for incoming first-year and transfer students through the Office of New Student and Family Programs. The New Student Orientation program for first-time freshmen introduces students and their parents to the university, its expectations of them, campus resources, academic programs and courses offered. NSO provides opportunities for new students to interact with faculty, upper-level students and other new students. NSO participants can also meet with faculty members for information about their intended majors.

An important aspect of NSO is academic advising and registration. During advising, students meet with academic advisers to discuss their educational plans and course placement, and they also choose classes for the first semester. Students also learn how to use the online registration system to register for classes.

NSO sessions are conducted throughout the summer preceding the fall semester and during the week before classes begin for the spring semester. The summer orientation program for new freshmen also includes a supplemental program for parents and other family members. The orientation evening program focusing on student life provides an opportunity to stay overnight in a VCU residence hall.

Transfer students new to VCU also attend an orientation program, which includes an introduction to the university and its resources, as well as

an overview of majors, academic advising and registration. During the academic advising portion, students review how credits completed at another institution apply toward general education, major and elective requirements at VCU. Academic advisers also assist transfer students with selecting courses they will take during their first semester and help students to learn the online registration system used to register for classes.

## **Programs for parents and families of first-year VCU students**

Parents and family members play an important role in their college students' education. VCU believes that college is a collaborative experience among students, their families, and the faculty and staff of the university. Additionally, the Office of New Student and Family Programs offers several services for parents to support their first-year college students. Parent orientation is offered during the NSO, with programs geared specifically toward parents and their needs as a college parent.

Each fall the Office of New Student and Family Programs offers an online course for parents and family members where VCU faculty and university leaders discuss some of the key topics and issues in education today. "Beyond Orientation: Partnering for Success in Today's University" provides a network for parents and family members that takes them beyond what they learn in orientation, allowing them a closer look at the first-year experience and what it means to be a student in today's university. The course is designed to help parents and families relate to their students' experiences.

Parents also receive a copy of the monthly Parent and Family newsletter via email. Parents may participate in the Freshman Parent Association, providing input on parent programming and events. Parents are encouraged to attend the VCU Fall Fest, as well, with activities planned particularly for families.



# COLLEGE OF HUMANITIES AND SCIENCES

The faculty and staff of the College of Humanities and Sciences are dedicated to excellence in teaching, research and public service. The mission of Virginia Commonwealth University provides the framework for this pursuit of excellence.

Teaching and learning are central to the college, and the college is central to educational and intellectual life at VCU. The college meets the educational needs of a diverse student body, provides general education for all undergraduate students of the university, preparatory programs for the health sciences, engineering and law, and educates future teachers in the liberal arts and sciences. The college offers comprehensive undergraduate, graduate and professional programs of study that link a foundation of understanding and knowledge with skills on which students can build careers, become responsible citizens and continue lifelong learning.

Scholarship, creative work and professional accomplishment are essential to teaching and learning. The college is responsible for advancing understanding and increasing knowledge for its own sake, for the educational benefit of its students, and for the good of the larger community.

In both teaching and research, the College of Humanities and Sciences seriously upholds the responsibilities of being part of a public, metropolitan university. Through service and public teaching, the college meets the challenges and opportunities afforded by VCU's urban environment and by its location in the capital of the commonwealth.

The college achieves national and international recognition through the success of its students, the advancement of the disciplines and professions represented by its programs, and through the individual and collaborative research of its faculty.

## Administration

828 West Franklin Street  
P.O. Box 842019  
Richmond, Virginia 23284-2019  
Phone: (804) 828-1674  
Fax: (804) 828-1576  
has.vcu.edu (<http://www.has.vcu.edu>)

**Montserrat Fuentes, Ph.D.**  
Professor and dean

**James Mays, Ph.D.**  
Associate professor and associate dean for undergraduate academic affairs

## Accreditation

### Chemistry (bachelor's degree)

The American Chemical Society

### Forensic science (bachelor's and master's degrees)

Forensic Science Education Programs Accreditation Commission

### Mass communications (bachelor's degrees in the Richard T. Robertson School of Media and Culture)

Accrediting Council on Education in Journalism and Mass Communications

### Psychology (doctoral degrees: clinical, counseling)

American Psychological Association

## Undergraduate information

### Undergraduate degree programs

The College of Humanities and Sciences offers baccalaureate degrees in the following areas:

- African American Studies – B.A.
- Anthropology – B.S.
- Biology – B.S.
- Chemistry – B.S.
- Economics – B.S.
- English – B.A.
- Foreign Language – B.A.
  - French
  - German
  - Spanish
- Forensic Science – B.S.
- Gender, Sexuality and Women's Studies – B.A.
- Health, Physical Education and Exercise Science – B.S.
- History – B.A.
- Interdisciplinary Studies – B.I.S.
  - liberal studies for early and elementary education
- International Studies – B.A.
- Mass Communications – B.S.
  - advertising
    - creative
    - strategic
  - journalism
    - broadcast
    - print-online
  - public relations
- Mathematical Sciences – B.S.
  - applied mathematics
  - biomathematics
  - general mathematics
  - mathematics
  - operations research
  - secondary teacher preparation
  - statistics
- Philosophy – B.A.
  - ethics and public policy
  - philosophy and law

- philosophy and science
- Physics – B.S.
- Political Science – B.A.
- Psychology – B.S.
- Religious Studies – B.A.
- Science – B.S.
  - biology
  - chemistry
  - physics
  - professional science
- Sociology – B.S.

Information concerning curricula is given in the individual program descriptions.

## Minors and certificate programs

In addition to a major, a student may elect a minor area of study in any program or department offering such a program. The minor can be used to fulfill career needs or serve as a means for the student to study a discipline of secondary interest.

Students interested in pursuing a minor should discuss their intentions with their advisers or the chair of the major department. When the student decides on a minor, a Change of Major/Minor form must be completed in the Office of Records and Registration. When the student files for graduation, the student must complete the Minor Application along with the Graduation Application.

Courses for the minor should be chosen from courses approved by departments offering minors in their areas. Generally, students cannot minor in the same area as their major.

A minor designation on the transcript requires a minimum of 18 credit hours and a minimum 2.0 GPA must be achieved in the minor. Prerequisites for courses are stated under course descriptions.

Detailed descriptions of each minor and certificate program appear in this bulletin.

Minors are offered in the following areas:

- African American studies
- African studies
- American studies
- anthropology
- Arabic and Middle Eastern studies
- Asian and Chinese studies
- biology
- British studies
- chemistry
- creative writing
- economics
- English
- European studies
- French
- gender, sexuality and women's studies
- German
- history

- international social justice studies
- Italian studies
- Latin American studies
- mathematical sciences
- media studies
- Mediterranean studies
- nonprofit management and administration
- philosophy
- philosophy of law
- physics
- political science
- psychology
- public management
- religious studies
- Russian studies
- sociology
- Spanish
- statistics
- world cinema
- writing

Undergraduate certificates are awarded in the following areas and levels:

- international management studies (baccalaureate certificate, in conjunction with the School of Business)
- Spanish/English translation and interpretation (baccalaureate certificate)
- statistics (post-baccalaureate undergraduate certificate)

## Teacher preparation

Students in the college can apply to the Extended Teacher Preparation Program sponsored jointly with the School of Education. This program awards both a bachelor's degree from the College of Humanities and Sciences and a master's degree from the School of Education. Students who successfully complete this program will be certified to teach in early childhood, middle or secondary education.

Additional information on this five-year program is available at the School of Education's Office of Student Services in Room 3106, Oliver Hall, or by calling (804) 827-2670. A more thorough description of this program is found under the "School of Education" section of this bulletin and in the Extended Teacher Preparation Handbook available from the School of Education's Department of Teaching and Learning or the College of Humanities and Sciences dean's office.

Information about VCU students' performances on the state-mandated licensure tests (Praxis I: Reading, Writing and Mathematics and Praxis II: Specialty Area Tests) is available on the School of Education website: [soe.vcu.edu](http://www.soe.vcu.edu) (<http://www.soe.vcu.edu>).

## Educational goals

The ultimate goal of a liberal arts education is to help students develop the abilities to think and continue their learning. These skills will aid students as they take their places in a world dominated by change. These abilities also will aid students in their future endeavors as they encounter problems, whether in their personal or professional lives, or in their communities. Graduates of the College of Humanities and Sciences are broadly educated, not simply trained, allowing them to function as

understanding participants in events rather than as spectators or even victims of those events.

To achieve this goal, the faculty of the College of Humanities and Sciences has identified the following specific requirements.

- Students should write well, organize their ideas, support them and communicate them clearly and effectively.
- Students should reason logically and be able to quantify experiences.
- Students should have knowledge of the fundamental ideas and methods of the natural sciences.
- Students should be able to analyze ethical conflicts.
- Students should have an understanding of literature and the other arts.
- Students should have knowledge of American heritage and those of other cultures, along with an introduction to a foreign language.
- Students should have a basic knowledge of human behavior and social, political and cultural institutions.

Academic advising

All freshmen majoring in areas offered within the College of Humanities and Sciences are advised through University Academic Advising. Please refer to the Undergraduate study section of this bulletin for further information on the first-year advising program (p. 35). After attaining sophomore standing, students within the college receive academic advising from within the department or school of their majors. The advising system for each department and school varies somewhat; however, each student is assigned an adviser according to their program of study. Students are encouraged to take full advantage of the educational and career-planning assistance provided by their assigned faculty advisers. Ultimately, students are responsible for understanding all university and college requirements needed to earn a degree and for seeking out academic advising on a regular basis. The academic advisers provide assistance with interpreting policies, requirements and regulations, maximizing academic success and enriching the overall undergraduate educational experience.

Graduation requirements

For students majoring in a four-year bachelor’s degree program within the College of Humanities and Sciences (including students in the pre-dental, pre-medical, pre-optometry, pre-veterinary and extended teacher preparation program classifications), there are four areas of requirements that the student must complete for graduation:

1. Undergraduate Core Education Program requirements
2. General education requirements of the College of Humanities and Sciences (see departmental major sections for collateral requirements)
3. Departmental major requirements
4. Electives to complete the total of a minimum of 120 credits

General education requirements for undergraduate study

All baccalaureate degree programs require students to complete a minimum of 120 credits. No more than four of those credits can be physical education/activity courses. See program descriptions for exact number of major credits (30 credit minimum) and elective courses to complete the total required 120 credits.

General education requirements for bachelor’s degrees within the College of Humanities and Sciences

The purpose of general education courses in the College of Humanities and Sciences is to provide a foundation for lifelong learning among its students. This foundation includes the six core competencies of written communication, oral proficiency, critical thinking, information fluency, ethical and social responsibility and quantitative literacy.

The College of Humanities and Sciences’ general education curriculum encourages students to pursue multiple interests simultaneously and creates opportunities for connecting learning across courses, disciplines and contexts. Additionally, it provides students with effective communication skills, the ability to analyze situations and think critically about the world around them, locate and analyze information to make informed decisions, and integrate knowledge from multiple perspectives and disciplines. The College of Humanities and Sciences’ general education curriculum proposes to foster academic community by linking the liberal arts and professional learning, and provides a strong foundation of knowledge, skills and experiences that are the hallmark of a VCU undergraduate education.

The College of Humanities and Sciences’ general education program totals 33-49 credit hours (hours vary according to foreign language placement and variations in individual course credit hours). The general education program includes three distinct tiers plus a senior capstone experience that is part of the major requirements.

Foundational courses: 12-13 credit hours

Foundational courses lay the groundwork for developing skills in the six identified competencies and lay the groundwork for future learning. (These courses satisfy a portion of the University Core Curriculum (p. 64).)

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Select one of the following math and statistics courses:		3-4
MATH 131	Introduction to Contemporary Mathematics	
STAT 208	Statistical Thinking	
or a 100- or 200-level MATH or STAT course (except MATH 121, MATH 122, MATH 123) as listed on the major curriculum worksheet guide and recommended by the academic adviser		
Total Hours		12-13

Supporting courses: 18-21 credit hours

Supporting courses further develop the core competencies while providing a vehicle for intellectual inquiry within specific areas of study. Students must complete at least 18 credits (comprising at least six courses) by successfully completing the following: (i) at least one course in each of the following four content areas, and (ii) two additional courses from these content areas or the Tier II content areas of humanities/ fine arts, social/behavioral sciences or natural/physical sciences of the VCU Core Education Program (the two additional courses must be from different content areas).

1. Human, social and political behavior

- These courses are designed to deepen students’ understanding of the study of society and the behavior of its citizens in various contexts.
- |               |                              |   |
|---------------|------------------------------|---|
| ANTH/INTL 103 | Introduction to Anthropology | 3 |
|---------------|------------------------------|---|

ECON 101/INTL 102	Introduction to Political Economy	3
HUMS 300	Great Questions of the Social Sciences	3
POLI 103	U.S. Government	3
PSYC 101	Introduction to Psychology	4
SCTS 200	Science in Society: Values, Ethics and Politics	3
SOCY 101	Introduction to Sociology	3

## 2. Science and technology

These courses are designed to enhance students' literacy in science and technology, including an understanding of the natural world, experience with the fundamental ideas and methods of the sciences and greater scientific literacy, particularly in relation to energy, evolution and evaluation.

BIOL 101	Biological Concepts (3 or 4 credits)	3
BIOL/ENVS 103	Environmental Science	4
CHEM 110	Chemistry and Society	3
ENVS 201	Earth System Science	3
FRSC 202	Crime and Science	3
INSC 201	Energy!	3
PHYS 103	Elementary Astronomy	3

## 3. Diverse and global communities

These courses are designed to provide students with an understanding of communities, cultures and identities other than their own, and with the ability to apply methods of inquiry from various academic disciplines to the understanding of diverse cultures and societies and the interactions among them.

AFAM 111	Introduction to Africana Studies	3
GSWS 201	Introduction to Gender, Sexuality and Women's Studies	3
INTL 101	Human Societies and Globalization	3
MASC/INTL 151	Global Communications	3
POLI/INTL 105	International Relations	3
RELS 108	Human Spirituality	3

## 4. Literature and civilization

These courses are designed to help students explore the relationships between human expression (in texts, films and material culture) and human societies, as well as between the present and the past.

ENGL 215	Textual Analysis	3
HIST 201	The Art of Historical Detection: ____	3
HUMS 250	Reading Film	3
PHIL 201	Critical Thinking About Moral Problems	3
WRLD/INTL 203	Cultural Texts and Contexts: ____	3
WRLD 230	Introduction to World Cinema	3

Students who have studied a foreign language have cognitive development, creativity and divergent thinking. Students must complete a foreign language through the 102 level or equivalent through credit, placement testing or other demonstrated proficiency.

2. **Experiential fine arts (1-3 credits)** Students involved in the fine arts gain a greater understanding of the cultural and aesthetic possibilities of the world around them. Students satisfy this requirement by the completion of one course offered by the School of the Arts.
3. **HUMS 202 (1 credit)** An online personal finance course focusing on participatory, application-based exercises designed to arm students with the ability to make educated decisions in relation to future financial choices such as payment of student loans, understanding credit card statements, applying for mortgages, credit rating and planning for retirement.

## Senior capstone: 1-3 credit hours

This course provides a discipline-specific culminating intellectual experience. Students must take at least 1 credit of a senior capstone experience within the major. Students must have senior status (at least 85 credit hours toward graduation) when completing this requirement.

# Department of African American Studies

## TBD

Chair

[afam.vcu.edu](http://afam.vcu.edu) (<http://www.afam.vcu.edu>)

The Department of African American Studies at Virginia Commonwealth University provides an educationally rich environment in which students and scholars research, learn and teach about the past and present realities of people of African descent. Employing a wide range of theories, perspectives, methods and tools, African American Studies faculty explore social, political, economic and cultural realities and connections between the experiences of persons in Africa and throughout the African Diaspora. The department emphasizes experiential learning, offers study abroad opportunities and internships.

- African American Studies, Bachelor of Arts (B.A.) (p. 71)
- African American Studies, Bachelor of Arts (B.A.) with a concentration in:
  - Artistic, historical and literary perspectives (p. 75)
  - Political, religious and societal perspectives (p. 77)
  - Social and behavioral perspectives (p. 79)
- African American studies, minor in (p. 81)

## African American Studies, Bachelor of Arts (B.A.)

The Bachelor of Arts in African American Studies is an interdisciplinary degree that provides students with knowledge of human cultures and intellectual and practical skills to engage complexity, diversity and change. The degree program fosters students' personal and social responsibility and, through applied learning experiences, empowers students to negotiate and to solve the complex problems of the 21st century. African American studies majors often pursue graduate and professional degree programs in business, education, history, international relations, law, political science, psychology, public health and social work. Career opportunities with a B.A. only in African American

## Experiential courses: 2-12 credit hours

These courses complement the other areas of inquiry by providing practical and experientially based knowledge both within and outside of the traditional classroom setting.

1. **Foreign language (0-8 credits)** The study of a foreign language enhances students' appreciation for and knowledge of other cultures.

Studies include employment in community health agencies, public and private schools and nonprofit organizations.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- 1. Define Black experiences across the African Diaspora.**  
We aim for each of our majors to demonstrate knowledge of the major concepts, perspectives and theories in Africana studies. This knowledge includes an understanding of the intellectual origins and extant and emergent interdisciplinary scholarship that provide context, definition and form to the collective experiences of persons of African descent.
- 2. Document and measure Black experiences across the African Diaspora.**  
We aim for each of our majors to demonstrate analytical skills that enable them to compare and contrast the utility of qualitative and quantitative approaches in Africana studies and critical-thinking skills that allow them to assess the cultural, political and social implication of such approaches when measuring the experiences of people across Africa and its Diaspora.
- 3. To interpret Black experiences across the African Diaspora.**  
We aim for each of our majors to demonstrate an awareness of the interpretive frameworks that give meaning to Black experiences across the Diaspora. This awareness includes recognition of the intersectionality of artistic, cultural and historical perspectives; gendered, political and religious perspectives; and social and behavioral perspectives.
- 4. To affirm and validate Black experiences across the African Diaspora.**  
We aim for each of our student majors to demonstrate the ability to critically engage and to propose integrity-based solutions to novel problems that impact persons of African descent and their communities.

## Special requirements

Majors in African American studies must meet the general education requirements of the College of Humanities and Sciences. The Bachelor of Arts in African American Studies requires the completion of 120 credits with at least 30 credits in African American Studies courses. At least 15 of the 30 credits in African American Studies must be in upper-level courses. Students also are required to establish an area of study by taking either a minimum of four courses in a single cooperating department or in one of the following multidisciplinary concentrations: artistic, historical and literary perspectives; political, religious and societal perspectives; or social and behavioral perspectives. At least one of the four courses taken in a single cooperating department must have an Africana focus, and at least one of the four courses must be an upper-level course.

A cooperating department or program is defined as one that regularly offers at least one course with an Africana focus per year, which includes: Anthropology, Dance, English, Gender, Sexuality and Women's Studies, Geography, History, Mass Communications, Music history, Political Science, Psychology, Religious Studies, Sociology, and Theatre. When non-Africana-focused courses are used to meet the concentration requirement, they must be selected in consultation with the African American studies adviser

## Degree requirements for African American Studies, Bachelor of Arts (B.A.)

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Major requirements

AFAM 111	Introduction to Africana Studies	3
AFAM 211	Africana Social and Political Thought	3
AFAM 311	African Diaspora Experiences	3
AFAM 399	Interdisciplinary Research Methods <sup>1</sup>	3
AFAM 411	Applied Concepts in Africana Studies	3
AFAM 499	Capstone Seminar in Africana Studies	3
Cooperating departments and programs requirements		12
Total Hours		30

<sup>1</sup> Any one of GSWS 393, POLI 320, PSYC 317, SOCY 320 or SLWK 380 may be substituted for this course if completed with a minimum grade of C.

### Open electives

Select 32-58 credits of electives 32-58



## Total minimum requirement 120 credits

### Cooperating departments and programs requirement

Complete four courses in one of the cooperating departments or programs listed below, including at least one Africana-focused course and at least one upper level course.

- Anthropology
- Dance
- English
- Gender, Sexuality and Women's Studies
- Geography
- History
- Mass Communications
- Music History
- Political Science
- Psychology
- Religious Studies
- Sociology
- Theatre

Refer to the list below for Africana-focused courses offered by or in conjunction with these cooperating departments.

### Africana-focused courses from cooperating departments

Note: Students choosing the cooperating department option must complete four courses in one cooperating department or program, including at least one Africana-focused course (from lists below) and at least one upper-level course.

#### Anthropology

AFAM/ANTH/INTL 200	Introduction to African Societies	3
AFAM/ANTH/INTL 309	Global Women's Health	3
AFAM/ANTH 416	The Origin and Evolution of the Idea of Race	3
AFAM/ANTH/INTL 420	Women of Africa	3

Or a course approved by an African American studies adviser

#### Dance

AFAM/DANC 121	Tap Technique I	2
AFAM/DANC 122	Tap Technique I	2
AFAM/DANC 126	African-Caribbean Dance I	2
AFAM/DANC 127	African-Caribbean Dance I	2
AFAM/DANC 151	Jazz Dance Technique I	2
AFAM/DANC 152	Jazz Dance Technique I	2
DANC 255	Hip Hop Dance	2
DANC 256	Hip Hop Dance	2
DANC 291	Topics in Dance	1-4
DANC 413	African American Presence in American Dance, Performance and Social Contexts	3

Or a course approved by an African American studies adviser

#### English

AFAM/ENGL 363/INTL 366	African Literature	3
------------------------	--------------------	---

AFAM/ENGL 365/INTL 367	Caribbean Literature	3
AFAM/ENGL 379	African-American Literature : Beginnings through Through the Harlem Renaissance	3
ENGL 355	African-American Women Writers	3
ENGL 382	African-American Literature: Realism to the Present	3

Or a course approved by an African American studies adviser

#### Gender, sexuality and women's studies

AFAM/GSWS/SOCY 305	African American Family in Social Context	3
AFAM/ANTH/INTL/GSWS 309	Global Women's Health	3
AFAM/POLI/GSWS 318	Politics of Race, Class and Gender	3
AFAM 390/HIST 380/GSWS 390	Africa and the Americas: Slavery, Gender and Race	3
GSWS 450	Black Feminist Thought	3

Or a course approved by an African American studies adviser

#### Geography

AFAM/URSP/INTL 333	Geography of Africa	3
--------------------	---------------------	---

Or a course approved by an African American studies adviser

#### History

AFAM/HIST 105	Survey of African History	3
AFAM/HIST 106	Survey of African History	3
AFAM/HIST 361	Americans from Africa	3
AFAM/HIST 362	Americans from Africa	3
AFAM 387/HIST 381	History of West Africa to 1800	3
AFAM 388/HIST 384	Africa: Social, Cultural and Economic History	3
AFAM 389/HIST 383	History of Southern Africa	3
AFAM 390/HIST 380/GSWS 390	Africa and the Americas: Slavery, Gender and Race	3
AFAM 392/HIST 376	Caribbean History to 1838	3
AFAM 393	Akhenaten to Cleopatra	3
HIST 302	Ancient Egypt	3
HIST 348	The American Civil War and Reconstruction	3
HIST 352	History of the South I	3
HIST 353	History of the South II	3
HIST 356	History of Virginia I	3
HIST 357	History of Virginia II	3
HIST 360	The Long Civil Rights Movement	3
HIST 377	Caribbean History Since 1838	3
HIST 378	Atlantic Slavery	3
HIST 410	Studies in African History: ____	3
HIST 411	Studies in the African Diaspora: ____	3
HIST 417	Studies in African American History: ____	3

Or a course approved by an African American studies adviser

<b>Mass communications</b>		
AFAM/MASC 474	Minorities and the Mass Media	3
Or a course approved by an African American studies adviser		
<b>Music and music history</b>		
AFAM/MHIS 250	Introduction to African-American Music	3
AFAM/MHIS 350/ INTL 370	Studies in the Music of the African Continent and Diaspora	3
APPM 360	Jazz Orchestra <sup>1</sup>	1
APPM 361	Small Jazz Ensemble <sup>1</sup>	1
MHIS 147	Jazz Theory and Aural Skills <sup>2</sup>	3
MHIS 291	Topics in Music	1-3
MHIS 311	Jazz Arranging I <sup>2</sup>	3
MHIS 312	Jazz Arranging II <sup>2</sup>	3
MHIS 324	Jazz History <sup>2</sup>	3
<b>Political science</b>		
AFAM/POLI 302	Politics of the Civil Rights Movement	3
AFAM/POLI/GSWS 318	Politics of Race, Class and Gender	3
AFAM/POLI 343	Black Political Thought	3
AFAM/POLI 345	African-American Politics	3
AFAM/POLI/INTL 356	Government and Politics of Africa	3
AFAM/POLI/INTL 357	Politics of Southern Africa	3
Or a course approved by an African American studies adviser		
<b>Psychology</b>		
AFAM/PSYC 322	Personality and Behavior of the African American	3
AFAM 346	Mental Health Across the African Diaspora	3
Or a course approved by an African American studies adviser		
<b>Religious studies</b>		
AFAM/RELS/INTL 307	Black Religion	3
AFAM/INTL/RELS 451	Religion, Racism and Social Justice	3
Or a course approved by an African American studies adviser		
<b>Sociology</b>		
AFAM/SOCY 104	Sociology of Racism	3
AFAM/GSWS/SOCY 305	African American Family in Social Context	3
AFAM/SOCY 401	African-Americans and the U.S. Health Care System	3
Or a course approved by an African American studies adviser		
<b>Theatre</b>		
AFAM/THEA 303	Black Theatre	3
Or a course approved in conjunction by advisers in Theatre and African American studies		

<sup>1</sup> Accessible by audition<sup>2</sup> Restricted to music majors

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

<b>Freshman year</b>			
<b>Fall semester</b>			<b>Hours</b>
AFAM 111	Introduction to Africana Studies <sup>1</sup>		3
UNIV 101	Introduction to the University		1
UNIV 111	Focused Inquiry I		3
Approved H&S human, social and political behavior			3-4
Approved quantitative literacy			3-4
Term Hours:			13-15
<b>Spring semester</b>			
HUMS 202	Choices in a Consumer Society		1
UNIV 112	Focused Inquiry II		3
Approved H&S general education elective			3-4
Approved H&S literature and civilization			3
Approved H&S science and technology			3-4
Term Hours:			13-15
<b>Sophomore year</b>			
<b>Fall semester</b>			
AFAM 211	Africana Social and Political Thought		3
UNIV 200	Inquiry and the Craft of Argument		3
Experiential fine arts			1-3
Foreign language (102-level)			4
Open elective			3
Term Hours:			14-16
<b>Spring semester</b>			
Approved cooperating department elective			3
Approved H&S general education elective			3-4
Open electives			9
Term Hours:			15-16
<b>Junior year</b>			
<b>Fall semester</b>			
AFAM 311	African Diaspora Experiences		3
Approved cooperating department elective			3
Open electives			10-12
Term Hours:			16-18
<b>Spring semester</b>			
AFAM 399	Interdisciplinary Research Methods <sup>2</sup>		3
Approved cooperating department elective			3
Open electives			10-12
Term Hours:			16-18
<b>Senior year</b>			
<b>Fall semester</b>			
AFAM 411	Applied Concepts in Africana Studies		3
Approved cooperating department elective			3
Open electives			12
Term Hours:			18
<b>Spring semester</b>			
AFAM 499	Capstone Seminar in Africana Studies		3

Open electives	12
Term Hours:	15
Total Hours:	120-131

<sup>1</sup> Fulfills H&S diverse and global communities

<sup>2</sup> Any one of GSWS 393, POLI 320, PSYC 317, SOCY 320 or SLWK 380 may be substituted for this course if completed with a minimum grade of C.

## African American Studies, Bachelor of Arts (B.A.) with a concentration in artistic, historical and literary perspectives

The Bachelor of Arts in African American Studies is an interdisciplinary degree that provides students with knowledge of human cultures and intellectual and practical skills to engage complexity, diversity and change. The degree program fosters students' personal and social responsibility and, through applied learning experiences, empowers students to negotiate and to solve the complex problems of the 21st century. African American studies majors often pursue graduate and professional degree programs in business, education, history, international relations, law, political science, psychology, public health and social work. Career opportunities with a B.A. only in African American Studies include employment in community health agencies, public and private schools and nonprofit organizations.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- **Define Black experiences across the African Diaspora.**

We aim for each of our majors to demonstrate knowledge of the major concepts, perspectives and theories in Africana studies. This knowledge includes an understanding of the intellectual origins and extant and emergent interdisciplinary scholarship that provide context, definition and form to the collective experiences of persons of African descent.

- **Document and measure Black experiences across the African Diaspora.**

We aim for each of our majors to demonstrate analytical skills that enable them to compare and contrast the utility of qualitative and quantitative approaches in Africana studies and critical-thinking skills that allow them to assess the cultural, political and social implications of such approaches when measuring the experiences of people across Africa and its Diaspora.

- **To interpret Black experiences across the African Diaspora.**

We aim for each of our majors to demonstrate an awareness of the interpretive frameworks that give meaning to Black experiences across the Diaspora. This awareness includes recognition of the intersectionality of artistic, cultural and historical perspectives; gendered, political and religious perspectives; and social and behavioral perspectives.

- **To affirm and validate Black experiences across the African Diaspora.**

We aim for each of our student majors to demonstrate the ability to critically engage and to propose integrity-based solutions to novel problems that impact persons of African descent and their communities

## Special requirements

Majors in African American studies must meet the general education requirements of the College of Humanities and Sciences. The Bachelor of Arts in African American Studies requires the completion of 120 credits with at least 30 credits in African American Studies courses. At least 15 of the 30 credits in African American Studies must be in upper-level courses.

Students also are required to establish an area of study by taking a minimum of four courses in the artistic, historical and literary perspectives concentration. At least one of the four courses must be an upper-level course.

## Degree requirements for African American Studies, Bachelor of Arts (B.A.) with a concentration in artistic, historical and literary perspectives

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

## Major requirements

AFAM 111	Introduction to Africana Studies	3
AFAM 211	Africana Social and Political Thought	3
AFAM 311	African Diaspora Experiences	3
AFAM 399	Interdisciplinary Research Methods <sup>1</sup>	3

AFAM 411	Applied Concepts in Africana Studies	3
AFAM 499	Capstone Seminar in Africana Studies	3
Artistic, historical and literary perspectives requirement (Complete a minimum of 12 credits from the approved electives below. At least one course must be 300-level or higher.)		12
Total Hours		30

<sup>1</sup> Any one of GSWS 393, POLI 320, PSYC 317, SOCY 320 or SLWK 380 may be substituted for this course if completed with a minimum grade of C.

## Open electives

Open electives 32-58

## Total minimum requirement 120 credits

### Artistic, historical and literary perspectives electives

AFAM/HIST 105	Survey of African History	3
AFAM/ANTH/INTL 200	Introduction to African Societies	3
AFAM/MHIS 250	Introduction to African-American Music	3
AFAM/THEA 303	Black Theatre	3
AFAM/URSP/INTL 333	Geography of Africa	3
AFAM/ARTH 342	African-American Art	3
AFAM/ARTH 358	African Art and Architecture	3
AFAM/HIST 361	Americans from Africa	3
AFAM/HIST 362	Americans from Africa	3
AFAM/ENGL 363/INTL 366	African Literature	3
AFAM/ENGL 365/INTL 367	Caribbean Literature	3
AFAM/ENGL 379	African-American Literature : Beginnings through Through the Harlem Renaissance	3
AFAM 387/HIST 381	History of West Africa to 1800	3
AFAM 388/HIST 384	Africa: Social, Cultural and Economic History	3
AFAM 389/HIST 383	History of Southern Africa	3
AFAM 390/HIST 380/GSWS 390	Africa and the Americas: Slavery, Gender and Race	3
AFAM 392/HIST 376	Caribbean History to 1838	3
AFAM 413/ARTH 350	African and Oceanic Art	3
AFAM/ANTH/INTL 420	Women of Africa	3
AFAM/ARTH 440	Contemporary Art and Architecture of Africa	3
AFAM 491	Topics in African-American Studies (courses with an artistic, historical or literary focus only)	3
APPM 360	Jazz Orchestra <sup>1</sup>	1
APPM 361	Small Jazz Ensemble <sup>1</sup>	1

ARTH 454	Studies in African and Oceanic Art	3
DANC 255	Hip Hop Dance	2
DANC 256	Hip Hop Dance	2
DANC 291	Topics in Dance	1-4
DANC 413	African American Presence in American Dance, Performance and Social Contexts	3
ENGL 355	African-American Women Writers	3
ENGL 382	African-American Literature: Realism to the Present	3
FREN 450	Francophone Literatures and Cultures	1-3
HIST 302	Ancient Egypt	3
HIST 348	The American Civil War and Reconstruction	3
HIST 352	History of the South I	3
HIST 353	History of the South II	3
HIST 356	History of Virginia I	3
HIST 357	History of Virginia II	3
HIST 360	The Long Civil Rights Movement	3
HIST 377	Caribbean History Since 1838	3
HIST 378	Atlantic Slavery	3
HIST 410	Studies in African History: ____	3
HIST 411	Studies in the African Diaspora: ____	3
HIST 417	Studies in African American History: ____	3
MHIS 147	Jazz Theory and Aural Skills <sup>2</sup>	3
MHIS 291	Topics in Music	1-3
MHIS 311	Jazz Arranging I <sup>2</sup>	3
MHIS 312	Jazz Arranging II <sup>2</sup>	3
MHIS 324	Jazz History <sup>2</sup>	3

Some cross listed courses may count toward multiple concentration requirements.

<sup>1</sup> Accessible by audition

<sup>2</sup> Restricted to music majors

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
AFAM 111	Introduction to Africana Studies <sup>1</sup>	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved H&S human, social and political behavior		3-4
Approved quantitative literacy		3-4
Term Hours:		13-15

### Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Approved H&S general education elective		3-4
Approved H&S literature and civilization		3

Approved H&S science and technology	3-4
Term Hours:	13-15
<b>Sophomore year</b>	
<b>Fall semester</b>	
AFAM 211 Africana Social and Political Thought	3
UNIV 200 Inquiry and the Craft of Argument	3
Experiential fine arts	1-3
Foreign language (102-level)	4
Open elective	3
Term Hours:	14-16
<b>Spring semester</b>	
Approved artistic, historical and literary perspectives elective	3
Approved H&S general education elective	3-4
Open electives	9
Term Hours:	15-16
<b>Junior year</b>	
<b>Fall semester</b>	
AFAM 311 African Diaspora Experiences	3
Approved artistic, historical and literary perspectives elective	3
Open electives	10-12
Term Hours:	16-18
<b>Spring semester</b>	
AFAM 399 Interdisciplinary Research Methods <sup>2</sup>	3
Approved artistic, historical and literary perspectives elective	3
Open electives	10-12
Term Hours:	16-18
<b>Senior year</b>	
<b>Fall semester</b>	
AFAM 411 Applied Concepts in Africana Studies	3
Approved artistic, historical and literary perspectives elective	3
Open electives	12
Term Hours:	18
<b>Spring semester</b>	
AFAM 499 Capstone Seminar in Africana Studies	3
Open electives	12
Term Hours:	15
Total Hours:	120-131

<sup>1</sup> Fulfills H&S diverse and global communities

<sup>2</sup> Any one of GSWS 393, POLI 320, PSYC 317, SOCY 320 or SLWK 380 may be substituted for this course if completed with a minimum grade of C.

## African American Studies, Bachelor of Arts (B.A.) with a concentration in political, religious and societal perspectives

The Bachelor of Arts in African American Studies is an interdisciplinary degree that provides students with knowledge of human cultures and intellectual and practical skills to engage complexity, diversity and change. The degree program fosters students' personal and social responsibility and, through applied learning experiences, empowers students to negotiate and to solve the complex problems of the 21st century. African American studies majors often pursue graduate and professional degree programs in business, education, history, international relations, law, political science, psychology, public health and social work. Career opportunities with a B.A. only in African American Studies include employment in community health agencies, public and private schools and nonprofit organizations.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- **Define Black experiences across the African Diaspora.**  
We aim for each of our majors to demonstrate knowledge of the major concepts, perspectives and theories in Africana studies. This knowledge includes an understanding of the intellectual origins and extant and emergent interdisciplinary scholarship that provide context, definition and form to the collective experiences of persons of African descent.
- **Document and measure Black experiences across the African Diaspora.**  
We aim for each of our majors to demonstrate analytical skills that enable them to compare and contrast the utility of qualitative and quantitative approaches in Africana studies and critical-thinking skills that allow them to assess the cultural, political and social implications of such approaches when measuring the experiences of people across Africa and its Diaspora.
- **To interpret Black experiences across the African Diaspora.**  
We aim for each of our majors to demonstrate an awareness of the interpretive frameworks that give meaning to Black experiences across the Diaspora. This awareness includes recognition of the intersectionality of artistic, cultural and historical perspectives; gendered, political and religious perspectives; and social and behavioral perspectives.
- **To affirm and validate Black experiences across the African Diaspora.**  
We aim for each of our student majors to demonstrate the ability to critically engage and to propose integrity-based solutions to novel problems that impact persons of African descent and their communities.

### Special requirements

Majors in African American studies must meet the general education requirements of the College of Humanities and Sciences. The Bachelor of Arts in African American Studies requires the completion of 120 credits with at least 30 credits in African American Studies courses. At least 15 of the 30 credits in African American Studies must be in upper-level courses.



Students also are required to establish an area of study by taking a minimum of four courses in the political, religious and societal perspectives concentration. At least one of the four courses must be an upper-level course.

## Degree requirements for African American Studies, Bachelor of Arts (B.A.) with a concentration in political, religious and societal perspectives

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	3
UNIV 200 Inquiry and the Craft of Argument	3
Approved humanities/fine arts	3
Approved natural/physical sciences	3-4
Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
<b>Total Hours</b>	<b>21-24</b>

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202 Choices in a Consumer Society	1
Approved H&S diverse and global communities	3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)	
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
<b>Total Hours</b>	<b>11-23</b>

<sup>1</sup> Course offered by the School of the Arts

### Major requirements

AFAM 111 Introduction to Africana Studies	3
AFAM 211 Africana Social and Political Thought	3
AFAM 311 African Diaspora Experiences	3
AFAM 399 Interdisciplinary Research Methods	3
AFAM 411 Applied Concepts in Africana Studies	3
AFAM 499 Capstone Seminar in Africana Studies	3
Political, Religious and Societal perspectives Requirement	12
<b>Total Hours</b>	<b>30</b>

### Open electives

Select 32-58 credits of electives

32-58

### Total minimum requirement 120 credits

#### Political, religious and societal perspectives requirement

Complete a minimum of 12 credits from the approved electives below. At least one course must be 300-level or higher.

#### Political, religious and societal perspectives electives <sup>1</sup>

AFAM/POLI 302	Politics of the Civil Rights Movement	3
AFAM/RELS/INTL 307	Black Religion	3
AFAM/ECON/INTL 315	Economic Development	3
AFAM/POLI/GSWS 318	Politics of Race, Class and Gender	3
AFAM/POLI 343	Black Political Thought	3
AFAM/POLI 345	African-American Politics	3
AFAM/POLI/INTL 356	Government and Politics of Africa	3
AFAM/POLI/INTL 357	Politics of Southern Africa	3
AFAM 491	Topics in African-American Studies (with a political, religious or societal focus)	3

<sup>1</sup> Some crosslisted courses may count toward multiple concentration requirements.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
AFAM 111	Introduction to Africana Studies <sup>1</sup>	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved H&S human, social and political behavior		3-4
Approved quantitative literacy		3-4
<b>Term Hours:</b>		<b>13-15</b>

#### Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Approved H&S general education elective		3-4
Approved H&S literature and civilization		3
Approved H&S science and technology		3-4
<b>Term Hours:</b>		<b>13-15</b>

#### Sophomore year

Fall semester		Hours
AFAM 211	Africana Social and Political Thought	3
UNIV 200	Inquiry and the Craft of Argument	3
Experiential fine arts		1-3
Foreign language (102-level)		4
Open elective		3
<b>Term Hours:</b>		<b>14-16</b>

**Spring semester**

Approved H&S general education elective	3-4
Approved political, religious and societal perspectives elective	3
Open electives	9
Term Hours:	15-16

**Junior year****Fall semester**

AFAM 311 African Diaspora Experiences	3
Approved political, religious and societal perspectives elective	3
Open electives	10-12
Term Hours:	16-18

**Spring semester**

AFAM 399 Interdisciplinary Research Methods	3
Approved political, religious and societal perspectives elective	3
Open electives	10-12
Term Hours:	16-18

**Senior year****Fall semester**

AFAM 411 Applied Concepts in Africana Studies	3
Approved political, religious and societal perspectives elective	3
Open electives	12
Term Hours:	18

**Spring semester**

AFAM 499 Capstone Seminar in Africana Studies	3
Open electives	12
Term Hours:	15
Total Hours:	120-131

<sup>1</sup> Fulfills H&S diverse and global communities

## African American Studies, Bachelor of Arts (B.A.) with a concentration in social and behavioral perspectives

The Bachelor of Arts in African American Studies is an interdisciplinary degree that provides students with knowledge of human cultures and intellectual and practical skills to engage complexity, diversity and change. The degree program fosters students' personal and social responsibility and, through applied learning experiences, empowers students to negotiate and to solve the complex problems of the 21st century. African American studies majors often pursue graduate and professional degree programs in business, education, history, international relations, law, political science, psychology, public health and social work. Career opportunities with a B.A. only in African American Studies include employment in community health agencies, public and private schools and nonprofit organizations.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

#### 1. Define Black experiences across the African Diaspora.

We aim for each of our majors to demonstrate knowledge of the major concepts, perspectives and theories in Africana studies. This knowledge includes an understanding of the intellectual origins and extant and emergent interdisciplinary scholarship that provide context, definition and form to the collective experiences of persons of African descent.

#### 2. Document and measure Black experiences across the African Diaspora.

We aim for each of our majors to demonstrate analytical skills that enable them to compare and contrast the utility of qualitative and quantitative approaches in Africana studies and critical-thinking skills that allow them to assess the cultural, political and social implication of such approaches when measuring the experiences of people across Africa and its Diaspora.

#### 3. To interpret Black experiences across the African Diaspora.

We aim for each of our majors to demonstrate an awareness of the interpretive frameworks that give meaning to Black experiences across the Diaspora. This awareness includes recognition of the intersectionality of artistic, cultural and historical perspectives; gendered, political and religious perspectives; and social and behavioral perspectives.

#### 4. To affirm and validate Black experiences across the African Diaspora.

We aim for each of our student majors to demonstrate the ability to critically engage and to propose integrity-based solutions to novel problems that impact persons of African descent and their communities.

## Special requirements

Majors in African American studies must meet the general education requirements of the College of Humanities and Sciences. The Bachelor of Arts in African American Studies requires the completion of 120 credits with at least 30 credits in African American Studies courses. At least 15 of the 30 credits in African American Studies must be in upper-level courses.

Students also are required to establish an area of study by taking a minimum of four courses in the social and behavioral perspectives concentration. At least one of the four courses must be an upper-level course.

## Degree requirements for African American Studies, Bachelor of Arts (B.A.) with a concentration in social and behavioral perspectives

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4

Approved social/behavioral sciences	3-4
Total Hours	21-24

### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Major requirements

AFAM 111	Introduction to Africana Studies	3
AFAM 211	Africana Social and Political Thought	3
AFAM 311	African Diaspora Experiences	3
AFAM 399	Interdisciplinary Research Methods <sup>1</sup>	3
AFAM 411	Applied Concepts in Africana Studies	3
AFAM 499	Capstone Seminar in Africana Studies	3
Social and Behavioral Perspectives Requirement		12
Total Hours		30

<sup>1</sup> Any one of GSWS 393, POLI 320, PSYC 317, SOCY 320 or SLWK 380 may be substituted for this course if completed with a minimum grade of C.

### Open electives

Select 32-58 credits of electives	32-58
-----------------------------------	-------

### Total minimum requirement 120 credits

#### Social and behavioral perspectives requirements

Complete a minimum of 12 credits from the approved electives below. At least one course must be 300-level or higher.

#### Social and behavioral perspectives electives <sup>1</sup>

AFAM/GSWS/SOCY 305	African American Family in Social Context	3
AFAM/ANTH/INTL/ GSWS 309	Global Women's Health	3
AFAM 310	African American Health: Health Disparities	3
AFAM/PSYC 322	Personality and Behavior of the African American	3
AFAM 346	Mental Health Across the African Diaspora	3
AFAM 347	African American Children and Families	3

AFAM/SOCY 401	African-Americans and the U.S. Health Care System	3
AFAM 491	Topics in African-American Studies (with a social or behavioral focus)	3
GSWS 450	Black Feminist Thought	3

<sup>1</sup> Some crosslisted courses may count toward multiple concentration requirements.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
AFAM 111	Introduction to Africana Studies <sup>1</sup>	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved H&S human, social and political behavior		3-4
Approved quantitative literacy		3-4
Term Hours:		13-15

#### Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Approved H&S general education elective		3-4
Approved H&S literature and civilization		3
Approved H&S science and technology		3-4
Term Hours:		13-15

#### Sophomore year

##### Fall semester

AFAM 211	Africana Social and Political Thought	3
UNIV 200	Inquiry and the Craft of Argument	3
Experiential fine arts		1-3
Foreign language (102-level)		4
Open elective		3
Term Hours:		14-16

##### Spring semester

Approved H&S general education elective		3-4
Approved social and behavioral perspectives elective		3
Open electives		9
Term Hours:		15-16

#### Junior year

##### Fall semester

AFAM 311	African Diaspora Experiences	3
Approved social and behavioral perspectives elective		3
Open electives		10-12
Term Hours:		16-18

##### Spring semester

AFAM 399	Interdisciplinary Research Methods <sup>2</sup>	3
Approved social and behavioral perspectives elective		3
Open electives		10-12
Term Hours:		16-18

#### Senior year

##### Fall semester

AFAM 411	Applied Concepts in Africana Studies	3
	Approved social and behavioral perspectives elective	3
	Open electives	12
Term Hours:		18
<b>Spring semester</b>		
AFAM 499	Capstone Seminar in Africana Studies	3
	Open electives	12
Term Hours:		15
Total Hours:		120-131

<sup>1</sup> Fulfills H&S diverse and global communities

<sup>2</sup> Any one of GSWS 393, POLI 320, PSYC 317, SOCY 320 or SLWK 380 may be substituted for this course if completed with a minimum grade of C.

## African American studies, minor in

The minor in African American studies requires a minimum of 18 credits. Students must complete the following:

AFAM 111	Introduction to Africana Studies	3
AFAM 211	Africana Social and Political Thought	3
AFAM 311	African Diaspora Experiences	3
	Select one course at the 300-level or above from each of the following concentration areas: <sup>1</sup>	12
	Artistic, historical and literary perspectives	
	Political, religious, and societal perspective	
	Social and behavioral perspectives	

<sup>1</sup> Refer to list of courses in the respective concentrations.

Courses in African American studies are designed to help students gain a knowledge and appreciation of the history and culture of the Africana world and its contributions to world civilizations.

## Department of Biology

**Donald R. Young, Ph.D.**  
Professor and chair

**Jennifer K. Stewart**  
Associate professor and director of graduate studies

biology.vcu.edu (<http://biology.vcu.edu>)

The Department of Biology offers programs leading to baccalaureate, master's and doctoral degrees; the doctoral degree is offered through the Ph.D. in Integrative Life Sciences program. Students may specialize within many areas, such as molecular and cellular biology, genetics, aquatic and terrestrial ecology, systematics, physiology, neurobiology, and developmental biology. Students also may develop an interdisciplinary focus to their degree program, for example within areas such as bioinformatics, cancer biology, forensic science and environmental science.

In addition to the courses offered by the Department of Biology, graduate students may enroll in graduate courses offered through VCU Life Sciences and these departments in the VCU School of Medicine: Anatomy and Neurobiology, Biochemistry and Molecular Biology, Biostatistics, Human and Molecular Genetics, Microbiology and Immunology, Pathology, Pharmacology and Toxicology, and

Physiology and Biophysics. Visit the Department of Biology's website at [biology.vcu.edu](http://biology.vcu.edu) (<http://biology.vcu.edu>).

- Biology, Bachelor of Science (B.S.) (p. 81)
- Biology, minor in (p. 84)

## Biology, Bachelor of Science (B.S.)

The four-year curriculum in biology prepares students for graduate study in biology, for employment in laboratory or field programs in private industry or government agencies and for teaching in secondary schools. This curriculum also prepares students for admission into schools of medicine, dentistry and veterinary medicine, and into allied health programs.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

#### Knowledge base

Students will demonstrate knowledge of evolutionary processes and the functions and interactions of cells, organisms and species.

#### Communication skills

Students will demonstrate oral and written communication skills needed for professional careers in the field of biology.

#### Critical-thinking skills

Students will demonstrate critical thinking, problem-solving and analytical skills.

#### Method and inquiry

Students will demonstrate knowledge in the methods of inquiry and research in biology.

## Transfer students

Transfer students intending to major in biology must satisfy all biology major course requirements and complete a minimum of 15 credits of VCU biology courses at the 300-, 400- or 500-level.

## Extended Teacher Preparation Program

Biology majors interested in teaching careers in secondary education can enroll in the Extended Teacher Preparation Program, which simultaneously awards a bachelor's degree in biology and a master's degree in teaching. For more information about this program, jointly administered by the College of Humanities and Sciences and the School of Education, contact the School of Education's Student Services Center.

## Honors in biology

Biology majors may graduate with honors in biology. To qualify, students must have overall and biology GPAs of at least 3.5 and must complete the following courses in this sequence: BIOL 392, at least four credits of BIOL 495 and BIOL 490. Grades of A or B must be earned in each of the listed courses. Students who qualify will have the notation "Honors in Biology" placed on their transcript. Students must meet all Department of Biology requirements for graduation. Students should consult with their academic advisers to create a program suitable to their particular needs and interests.

## Special requirements

The curriculum for a Bachelor of Science in Biology requires a minimum of 120 credits, with at least 40 of those credits in biology or other approved courses. A cumulative GPA of 2.0 for biology courses is required. At least five laboratory experiences must be taken from all biology courses; only one of these may be BIOZ 395, BIOL 492 or BIOL 495. Registration in BIOZ 395, BIOL 492 or BIOL 495 must be for a minimum of two credit hours to count as one of the six required laboratory experiences. A maximum total of six credits for all undergraduate research in biology (BIOZ 395, BIOL 395, BIOL 492 and BIOL 495) may be applied to the major. A maximum of four credits of BIOL 496 may be applied to the major if repeated with a different course. No more than eight credits of the 100-level (or introductory level) biology courses can be applied to the major.

A minimum grade of C in the following is required for enrollment in all courses for which they are prerequisites and to successfully complete the B.S. in Biology.

BIOL 151	Introduction to Biological Sciences I	3
BIOZ 151	Introduction to Biological Science Laboratory I	1
BIOL 152	Introduction to Biological Sciences II	3
BIOZ 152	Introduction to Biological Science Laboratory II	1
BIOL 200	Quantitative Biology	3
BIOL 300	Cellular and Molecular Biology	3
BIOL 310	Genetics	3
BIOL 317	Ecology	3
BIOL 318	Evolution	3

## Degree requirements for Biology, Bachelor of Science (B.S.)

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		

Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
Total Hours	11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
MATH 151	Precalculus Mathematics (by course or placement) (fulfills quantitative literacy) <sup>1</sup>	
PHYS 201 or PHYS 207	General Physics University Physics I	4-5
PHYS 202 or PHYS 208	General Physics University Physics II	4-5
STAT 210	Basic Practice of Statistics	3
Select one of the following:		3-4
Any STAT course (numbered 314 or above)		
MATH 200	Calculus with Analytic Geometry	
Total Hours		32-35

<sup>1</sup> This requirement can also be satisfied by any higher-level MATH course.

### Major requirements (minimum 40 credits)

#### Biocore

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I <sup>1</sup>	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II <sup>2</sup>	4
BIOL 200	Quantitative Biology	3
BIOL 300	Cellular and Molecular Biology	3
BIOL 310	Genetics	3
BIOL 317	Ecology	3
BIOL 318	Evolution	3
Select 1-4 credits from the following:		1-4

BIOL 475	Biology Capstone Seminar: ____ (Capstone)	
BIOZ 476	Biology Capstone Laboratory	
BIOL 477	Biology Capstone Experience (Capstone)	

**Biology electives** 13 - 16



Select from all biology (BIOL and BIOZ) courses applicable to the biology major and biochemistry (CHEM 403). All majors must complete at minimum three additional upper-level biology lab courses. The laboratory experiences may be fulfilled by a separate laboratory section (BIOZ) or by laboratory hours included in a lecture-based (BIOL) course. Not all courses are offered each semester. BIOL courses at the 500 level are available to seniors and graduate students only.

Other biology electives (to satisfy the 40 biology credits required for the major)

Total Hours 37-43

<sup>1</sup> BNFO/LFSC 251 approved course substitute

<sup>2</sup> BNFO/LFSC 252 approved course substitute

## Open electives

Select 0-16 open elective credits 0-16

## Total minimum requirement 120 credits

### Biology electives

BIOL 291	Topics in Biology	1-4
BIOL 303	Microbiology	3
BIOZ 303	Microbiology Laboratory	2
BIOL 307	Aquatic Ecology	3
BIOZ 307	Aquatic Ecology Laboratory	1
BIOL 308	Vertebrate Histology	4
BIOL 309	Entomology <sup>1</sup>	4
BIOZ 310	Laboratory in Genetics	2
BIOL 312	Invertebrate Zoology	3
BIOZ 312	Invertebrate Zoology Laboratory	1
BIOL 313	Vertebrate Natural History	3
BIOZ 313	Vertebrate Natural History Laboratory	1
BIOL 314	Animal Reproduction	3
BIOZ 317	Ecology Laboratory	2
BIOL 320	Biology of the Seed Plant <sup>1</sup>	4
BIOL 321	Plant Development	3
BIOZ 321	Plant Development Laboratory	2
BIOL 322	Economic Botany	3
BIOL 323	Plant Physiology	3
BIOL 325	Fungal Biology <sup>1</sup>	3
BIOL 332/ENVS 330	Environmental Pollution	3
BIOL 333	Evolution of the Angiosperms	3
BIOL 335	Global Change Biology	3
BIOL 341/ANTH 301	Human Evolution	3
BIOZ 341/ANTZ 301	Human Evolution Lab	1
BIOL 351/BNFO 301	Introduction to Bioinformatics	3
BIOL/BNFO/MATH 380	Introduction to Mathematical Biology	4
BIOL 391	Topics in Biology (as approved)	1-4
BIOZ 391	Topics in Biology Laboratory (as approved)	1-4
BIOL 395	Directed Study	1-2
BIOZ 395	Directed Study	1-2

BIOL 401	Applied and Environmental Microbiology	3
BIOL 402	Comparative Vertebrate Anatomy <sup>1</sup>	5
BIOL/ANTH 403	Primatology	3
BIOL 411	Animal Physiology	3
BIOL 413	Parasitology	3
BIOL 415	Mangrove Avian Field Ecology	4
BIOL 416	Ornithology	3
BIOZ 416	Ornithology Laboratory	2
BIOL 417	Mammalogy <sup>1</sup>	4
BIOL 422	Forest Ecology <sup>1</sup>	4
BIOL 425	Field Botany <sup>1</sup>	3
BIOL 430	Invasion Biology	3
BIOL 431	Introduction to Marine Biology	3
BIOL 435	Herpetology	3
BIOL/FRSC 438	Forensic Molecular Biology	3
BIOZ/FRSZ 438	Forensic Molecular Biology Laboratory	2
BIOL 440	Developmental Biology	3
BIOL 445	Neurobiology and Behavior <sup>1</sup>	4
BIOL 448	Neuroscience	3
BIOL 450	Biology of Cancer I	3
BIOL 451	Biology of Cancer II <sup>1</sup>	4
BIOL 452	Biology of Drugs	3
BIOL 455	Immunology	3
BIOL 459	Infectious Disease Ecology	3
BIOL 460	Human Evolutionary Genetics	3
BIOL 480	Animal-Plant Interactions	3
BIOL 489	Communicating Research	1
BIOL 490	Presenting Research	1
BIOL 491	Topics in Biology	1-4
BIOZ 491	Topics in Biology Laboratory	1-4
BIOL 492	Independent Study	1-4
BIOL 493	Biology Internship	1-3
BIOL 495	Research and Thesis	1-4
BIOL 496	Biology Preceptorship	2
BIOL 497	Ecological Service Learning	1
BIOL 502	Microbial Biotechnology	3
BIOL 503	Fish Biology <sup>1</sup>	4
BIOL 507	Aquatic Microbiology	4
BIOL 508	Barrier Island Ecology	3
BIOL 509	Microbial Ecology	3
BIOL 510	Conservation Biology	3
BIOL 514	Stream Ecology	4
BIOL/HGEN 516	Population Genetics	3
BIOL 518	Plant Ecology	4
BIOL 520	Population Ecology	3
BIOL 521	Community Ecology	3
BIOL 522	Evolution and Speciation	3
BIOL 524	Endocrinology	3
BIOL 530/HGEN 501	Human Genetics	3
BIOL 532	Water Pollution Biology	3
BIOL 535	Wetlands Ecology <sup>1</sup>	4

BIOL/BNFO 540	Fundamentals of Molecular Genetics	3
BIOL 545/LFSC 510	Biological Complexity	3
BIOL 548/LFSC 520	Bioinformatic Technologies	2
BIOL 550	Ecological Genetics	3
BIOL 560	Conservation Medicine	3
BIOL 565	Advances in Cell Signaling	3
BIOL 591	Special Topics in Biology	1-4
CHEM 403	Biochemistry I	3
LFSC 301	Integrative Life Sciences Research	3

<sup>1</sup> This course includes laboratory hours and may be used to satisfy laboratory requirements.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
BIOL 151	Introduction to Biological Sciences I	3
BIOZ 151	Introduction to Biological Science Laboratory I	1
CHEM 101	General Chemistry	3
CHEZ 101	General Chemistry Laboratory I	1
MATH 151	Precalculus Mathematics	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Term Hours:		16

### Spring semester

BIOL 152	Introduction to Biological Sciences II	3
BIOZ 152	Introduction to Biological Science Laboratory II	1
BIOL 200	Quantitative Biology	3
CHEM 102	General Chemistry	3
CHEZ 102	General Chemistry Laboratory II	1
HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Term Hours:		15

### Sophomore year

Fall semester		Hours
BIOL 300	Cellular and Molecular Biology	3
CHEM 301	Organic Chemistry	3
CHEZ 301	Organic Chemistry Laboratory I	2
STAT 210	Basic Practice of Statistics	3
UNIV 200	Inquiry and the Craft of Argument	3
Experiential fine arts		1-3
Term Hours:		15-17

### Spring semester

CHEM 302	Organic Chemistry	3
CHEZ 302	Organic Chemistry Laboratory II	2
MATH 200 or STAT 314	Calculus with Analytic Geometry or Applications of Statistics	4
Approved literature and civilization		3-4

Select one of the following:		3
BIOL 310	Genetics	3
BIOL 317	Ecology	3
BIOL 318	Evolution	3
Term Hours:		15-16

### Junior year

#### Fall semester

PHYS 201 or PHYS 207	General Physics or University Physics I	4-5
Approved human, social and political behavior		3
Foreign language (101-level)		4
Select the two courses not previously taken:		6
BIOL 310	Genetics	3
BIOL 317	Ecology	3
BIOL 318	Evolution	3
Term Hours:		17-18

#### Spring semester

PHYS 202 or PHYS 208	General Physics or University Physics II	4-5
Approved science and technology (other than BIOL 101)		3-4
Biology elective		3
Biology laboratory elective		1-2
Foreign language (102 - level)		4
Term Hours:		15-18

### Senior year

#### Fall semester

Approved diverse and global communities		3
Approved General Education elective		3-4
Biology elective(s)		3-6
Biology laboratory elective		1-2
General upper-level		3
Term Hours:		13-18

#### Spring semester

Approved General Education elective		3-4
Biology elective(s)		3-6
Biology laboratory elective		1-2
General upper-level electives		3
Select one of the following:		1-4
BIOL 477	Biology Capstone Experience	0
BIOL 475	Biology Capstone Seminar: ____	1-3
BIOZ 476	Biology Capstone Laboratory	2
Term Hours:		11-19
Total Hours:		117-137

## Total minimum requirement 120 credits Biology, minor in

The minor in biology requires a minimum of 20 credits in biology, including the following:

### Biology core courses

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
Select three courses from the following options:		9
BIOL 200	Quantitative Biology	
BIOL 300	Cellular and Molecular Biology	
BIOL 310	Genetics	
BIOL 317	Ecology	
BIOL 318	Evolution	
Select an additional three credits in biology at the upper level (at least one of these credits must be a biology laboratory experience).		3
Total Hours		20

Only courses applicable toward the B.S. in Biology can be applied toward the minor in biology. For a list of approved biology electives, see "Biology, Bachelor of Science (B.S.) (p. 81)" (p. 81) in the Undergraduate Bulletin.

Students are required to complete each of the biology core courses (listed above) with a minimum grade of C. A minimum GPA of 2.0 is required for all courses applicable to the minor. A minimum of nine upper-level biology credits must be taken at VCU.

BNFO 251/LFSC 251 and BNFO 252/LFSC 252 are approved course substitutes for BIOZ 151 and BIOZ 152, respectively.

## Department of Chemistry

**M. Samy El-Shall, Ph.D.**

Professor and chair

**Sally S. Hunnicutt, Ph.D.**

Associate professor and assistant chair

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

The Department of Chemistry offers programs leading to the Bachelor of Science, Master of Science and Doctor of Philosophy degrees. For undergraduate students, the Bachelor of Science offers concentrations in chemical science, professional chemist, professional chemist with honors, biochemistry and chemical modeling.

For graduate students, the Master of Science and Doctor of Philosophy programs provide opportunities for concentrated study in analytical, inorganic, organic or physical chemistry, or chemical physics. A plan of study is worked out for each student to ensure a sound basis for research. In keeping with the university's commitment as an urban institution, the department also offers part-time programs leading to these degrees.

Refer to the department's website for more information:  
chemistry.vcu.edu (<https://chemistry.vcu.edu>).

- Chemistry, Bachelor of Science (B.S.) with a concentration in:
  - Biochemistry (p. 85)
  - Chemical modeling (p. 87)

- Chemical science (p. 89)
- Professional chemist (p. 91)
- Professional chemist with honors (p. 93)
- Chemistry, minor in (p. 95)

## Chemistry, Bachelor of Science (B.S.) with a concentration in biochemistry

The curriculum in chemistry prepares students for graduate study in chemistry and related fields and for admission to schools of medicine, dentistry, pharmacy and veterinary medicine. It prepares students to teach in secondary schools or to work in chemical and industrial laboratories and in related fields of business and industry. The department also offers required and elective courses in chemistry to students in other programs of study.

The Department of Chemistry offers five areas of concentration for completing the Bachelor of Science in Chemistry: chemical science, professional chemist, professional chemist with honors, biochemistry and chemical modeling. With proper selection of electives, the degree satisfies admission requirements to most schools of medicine, dentistry, pharmacy and veterinary medicine.

The biochemistry concentration focuses on the biological aspects of chemistry, including molecular genetics and molecular biotechnology. This degree is another option for students planning to study medicine or dentistry.

## Learning outcomes

- Structure: Students will demonstrate understanding of the relationship between molecular structure and function.
- Descriptive chemistry: Students will be conversant with common chemical phenomena both symbolically and sensorially.
- Measurement and numeracy: Students will perform calculations needed to describe and model common chemical phenomena.
- Communication: Students will develop written and oral communication skills needed to explain chemical phenomena to novices and experts.
- Literacy: Students will search, read and assess scientific literature.
- Laboratory skills: Students will develop and practice laboratory bench and instrumentation skills.
- Information processing: Students will interpret tables, graphs, drawings and models.
- Critical thinking: Students will practice critical thinking and problem solving.

## Special requirements

Students must complete 43 credits in chemistry and related courses and 27 to 29 credits of collateral requirements.

A minimum grade of C is required in each prerequisite course:

CHEM 100	Introductory Chemistry (if required through placement qualifiers)	3
CHEM 101	General Chemistry	3
CHEM 102	General Chemistry	3
CHEM 301	Organic Chemistry	3

CHEM 302      Organic Chemistry      3

## Degree requirements for Chemistry, Bachelor of Science (B.S.) with a concentration in biochemistry

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	3
UNIV 200 Inquiry and the Craft of Argument	3
Approved humanities/fine arts	3
Approved natural/physical sciences	3-4
Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
Total Hours	21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202 Choices in a Consumer Society	1
Approved H&S diverse and global communities	3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)	
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
Total Hours	11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 300	Cellular and Molecular Biology	3
MATH 200 & MATH 201	Calculus with Analytic Geometry and Calculus with Analytic Geometry	8
Select one of the following:		8-10
PHYS 201 & PHYS 202	General Physics and General Physics	
PHYS 207 & PHYS 208	University Physics I and University Physics II	
STAT 210	Basic Practice of Statistics (fulfills quantitative literacy)	3

or STAT 212	Concepts of Statistics	
Total Hours		27-29

### Major requirements

<b>Chemistry core</b>		
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 303 & CHEZ 303	Physical Chemistry and Physical Chemistry Laboratory I	5
CHEM 304	Physical Chemistry	3
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	4
CHEM 320	Inorganic Chemistry I	3
CHEM 398	Professional Practices and Perspectives Seminar	1
CHEM 403	Biochemistry I	3
CHEM 404	Biochemistry II	3

<b>Chemistry electives</b>		
Select at least one of the approved electives below (three credits minimum) or any 500-level CHEM class for which prerequisites have been met.		3
Total Hours		43

### Open electives

Select two to 18 open elective credits	2-18
--	------

### Total minimum requirement 120 credits

<b>Chemistry electives</b>		
BIOL 310	Genetics	3
CHEM/MEDC 310	Medicinal Chemistry and Drug Design	3
CHEM 406	Inorganic Chemistry II	3
CHEM 409 & CHEZ 409	Instrumental Analysis and Instrumental Analysis Laboratory	5
CHEM 492	Independent Study	1-4

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
MATH 200	Calculus with Analytic Geometry	4
UNIV 111	Focused Inquiry I	3
Approved H&S diverse and global communities		3
Term Hours:		14

Spring semester		Hours
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4

HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry	4
UNIV 112	Focused Inquiry II	3
Approved H&S human, social and political behavior		3
Term Hours:		15

**Sophomore year****Fall semester**

BIOL 151	Introduction to Biological Sciences I	4
& BIOZ 151	and Introduction to Biological Science Laboratory I	
CHEM 301	Organic Chemistry	5
& CHEZ 301	and Organic Chemistry Laboratory I	
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S literature and civilization		3
Term Hours:		15

**Spring semester**

BIOL 152	Introduction to Biological Sciences II	4
& BIOZ 152	and Introduction to Biological Science Laboratory II	
CHEM 302	Organic Chemistry	5
& CHEZ 302	and Organic Chemistry Laboratory II	
CHEM 309	Quantitative Analysis	4
& CHEZ 309	and Quantitative Analysis Laboratory	
Approved H&S science and technology		3
Term Hours:		16

**Junior year****Fall semester**

BIOL 300	Cellular and Molecular Biology	3
CHEM 320	Inorganic Chemistry I	3
CHEM 403	Biochemistry I	3
PHYS 201	General Physics	4-5
or PHYS 207	or University Physics I	
Foreign language (101 level)		4
Term Hours:		17-18

**Spring semester**

CHEM 398	Professional Practices and Perspectives Seminar	1
CHEM 404	Biochemistry II	3
PHYS 202	General Physics	4-5
or PHYS 208	or University Physics II	
STAT 210	Basic Practice of Statistics	3
Foreign language (102 level)		4
Term Hours:		15-16

**Senior year****Fall semester**

CHEM 303	Physical Chemistry	5
& CHEZ 303	and Physical Chemistry Laboratory I	
Approved H&S general education electives		6
Chemistry elective		3-5
Experiential fine arts		1-3
Term Hours:		15-19

**Spring semester**

CHEM 304	Physical Chemistry	3
Open electives (upper-level if needed)		10-12
Term Hours:		13-15
Total Hours:		120-128

## Chemistry, Bachelor of Science (B.S.) with a concentration in chemical modeling

The curriculum in chemistry prepares students for graduate study in chemistry and related fields and for admission to schools of medicine, dentistry, pharmacy and veterinary medicine. It prepares students to teach in secondary schools or to work in chemical and industrial laboratories and in related fields of business and industry. The department also offers required and elective courses in chemistry to students in other programs of study.

The Department of Chemistry offers five areas of concentration for completing the Bachelor of Science in Chemistry: chemical science, professional chemist, professional chemist with honors, biochemistry and chemical modeling. With proper selection of electives, the degree satisfies admission requirements to most schools of medicine, dentistry, pharmacy and veterinary medicine.

The chemical modeling concentration emphasizes areas of overlap between chemistry and the mathematical sciences and computer science. Students in this concentration will focus on learning the chemistry and computer technology for modeling the structure, properties and reactivity of molecules.

## Learning outcomes

- **Structure:** Students will demonstrate understanding of the relationship between molecular structure and function.
- **Descriptive chemistry:** Students will be conversant with common chemical phenomena both symbolically and sensorially.
- **Measurement and numeracy:** Students will perform calculations needed to describe and model common chemical phenomena.
- **Communication:** Students will develop written and oral communication skills needed to explain chemical phenomena to novices and experts.
- **Literacy:** Students will search, read and assess scientific literature.
- **Laboratory skills:** Students will develop and practice laboratory bench and instrumentation skills.
- **Information processing:** Students will interpret tables, graphs, drawings and models.
- **Critical thinking:** Students will practice critical thinking and problem solving.

## Special requirements

Students must complete 45 credits in chemistry and related major courses and 28-29 credits of collateral requirements.

A minimum grade of C is required in each prerequisite course:

CHEM 100	Introductory Chemistry (if required through placement qualifiers)	3
CHEM 101	General Chemistry	3
CHEM 102	General Chemistry	3
CHEM 301	Organic Chemistry	3



CHEM 302 Organic Chemistry 3

## Degree requirements for Chemistry, Bachelor of Science (B.S.) with a concentration in chemical modeling

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	3
UNIV 200 Inquiry and the Craft of Argument	3
Approved humanities/fine arts	3
Approved natural/physical sciences	3-4
Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
Total Hours	21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202 Choices in a Consumer Society	1
Approved H&S diverse and global communities	3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)	
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
Total Hours	11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

CMSC 245 Introduction to Programming Using C++ or CMSC 255 Introduction to Programming	3-4
MATH 200 Calculus with Analytic Geometry	4
MATH 201 Calculus with Analytic Geometry	4
MATH 302 Numerical Calculus or MATH 310 Linear Algebra	3
MATH 307 Multivariate Calculus	4
MEDC 541 Survey of Molecular Modeling Methods	1
PHYS 207 University Physics I & PHYS 208 and University Physics II	10
STAT 210 Basic Practice of Statistics (fulfills quantitative literacy) or STAT 212 Concepts of Statistics	3
Total Hours	29-30

### Major requirements

<b>Chemistry core</b>		
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 303 & CHEZ 303	Physical Chemistry and Physical Chemistry Laboratory I	5
CHEM 304 & CHEZ 304	Physical Chemistry and Physical Chemistry Laboratory II	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	4
CHEM/MEDC 310	Medicinal Chemistry and Drug Design	3
CHEM 320	Inorganic Chemistry I	3
CHEM 398	Professional Practices and Perspectives Seminar	1
CHEM 510	Atomic and Molecular Structure	3

#### Chemistry and other approved electives

Select at least one of the approved electives below (three credits minimum) or any 500-level CHEM class for which prerequisites have been met.	3
Total Hours	45

### Open electives

Select zero to 15 open elective credits 0-15

### Total minimum requirement 120 credits

#### Chemistry electives

CHEM 492	Independent Study	1-4
STAT 321	Introduction to Statistical Computing	3
MATH 301	Differential Equations	3
MATH 327		
OPER 327	Mathematical Modeling	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester	Hours
CHEM 101 General Chemistry & CHEZ 101 and General Chemistry Laboratory I	4
MATH 200 Calculus with Analytic Geometry	4
UNIV 111 Focused Inquiry I	3
Approved H&S diverse and global communities	3
Term Hours:	14

#### Spring semester

CHEM 102 General Chemistry & CHEZ 102 and General Chemistry Laboratory II	4
HUMS 202 Choices in a Consumer Society	1
MATH 201 Calculus with Analytic Geometry	4

UNIV 112	Focused Inquiry II	3
Approved H&S human, social and political behavior		3
Term Hours:		15

**Sophomore year****Fall semester**

CHEM 301	Organic Chemistry	5
& CHEZ 301	and Organic Chemistry Laboratory I	
PHYS 207	University Physics I	5
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S literature and civilization		3
Term Hours:		16

**Spring semester**

CHEM 302	Organic Chemistry	5
& CHEZ 302	and Organic Chemistry Laboratory II	
CHEM 309	Quantitative Analysis	4
& CHEZ 309	and Quantitative Analysis Laboratory	
PHYS 208	University Physics II	5
Approved H&S science and technology		3
Term Hours:		17

**Junior year****Fall semester**

CHEM 303	Physical Chemistry	5
& CHEZ 303	and Physical Chemistry Laboratory I	
CHEM 320	Inorganic Chemistry I	3
CHEM 398	Professional Practices and Perspectives Seminar	1
STAT 210	Basic Practice of Statistics	3
Foreign language (101 level)		4
Term Hours:		16

**Spring semester**

CHEM 304	Physical Chemistry	5
& CHEZ 304	and Physical Chemistry Laboratory II	
CMSC 245	Introduction to Programming Using C++	3
or CMSC 255	or Introduction to Programming	
MATH 307	Multivariate Calculus	4
Foreign language (102 level)		4
Term Hours:		16

**Senior year****Fall semester**

MATH 302	Numerical Calculus	3
or MATH 310	or Linear Algebra	
Approved H&S general education elective		3
Chemistry elective		3
Experiential fine arts		1-3
Open electives		3-6
Term Hours:		13-18

**Spring semester**

CHEM 310	Medicinal Chemistry and Drug Design	3
or MEDC 310	or Medicinal Chemistry and Drug Design	
CHEM 510	Atomic and Molecular Structure	3
MEDC 541	Survey of Molecular Modeling Methods	1

Approved H&S general education elective	3
Open elective	3
Term Hours:	13
Total Hours:	120-125

## Chemistry, Bachelor of Science (B.S.) with a concentration in chemical science

The curriculum in chemistry prepares students for graduate study in chemistry and related fields and for admission to schools of medicine, dentistry, pharmacy and veterinary medicine. It prepares students to teach in secondary schools or to work in chemical and industrial laboratories and in related fields of business and industry. The department also offers required and elective courses in chemistry to students in other programs of study.

The Department of Chemistry offers five areas of concentration for completing the Bachelor of Science in Chemistry: chemical science, professional chemist, professional chemist with honors, biochemistry and chemical modeling. With proper selection of electives, the degree satisfies admission requirements to most schools of medicine, dentistry, pharmacy and veterinary medicine.

The chemical science concentration is tailored for the pre-professional study of the health sciences and other interdisciplinary areas where an emphasis on chemistry is sought. This concentration for the bachelor's degree in chemistry permits students to select more courses from other disciplines. With fewer requirements in mathematics, physics and chemistry, this concentration is one option for students planning to study medicine or dentistry.

## Learning outcomes

- **Structure:** Students will demonstrate understanding of the relationship between molecular structure and function.
- **Descriptive chemistry:** Students will be conversant with common chemical phenomena both symbolically and sensorially.
- **Measurement and numeracy:** Students will perform calculations needed to describe and model common chemical phenomena.
- **Communication:** Students will develop written and oral communication skills needed to explain chemical phenomena to novices and experts.
- **Literacy:** Students will search, read and assess scientific literature.
- **Laboratory skills:** Students will develop and practice laboratory bench and instrumentation skills.
- **Information processing:** Students will interpret tables, graphs, drawings and models.
- **Critical thinking:** Students will practice critical thinking and problem solving.

## Special requirements

Students must complete 37 credits in chemistry and 16 to 18 credits of collateral requirements.

A minimum grade of C is required in each prerequisite course:

CHEM 100	Introductory Chemistry (if required through placement qualifiers)	3
CHEM 101	General Chemistry	3
CHEM 102	General Chemistry	3

CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3

## Degree requirements Chemistry, Bachelor of Science (B.S.) with a concentration in chemical science

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	3
UNIV 200 Inquiry and the Craft of Argument	3
Approved humanities/fine arts	3
Approved natural/physical sciences	3-4
Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
Total Hours	21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202 Choices in a Consumer Society	1
Approved H&S diverse and global communities	3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)	
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
Total Hours	11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

MATH 200 Calculus with Analytic Geometry	8
& MATH 201 and Calculus with Analytic Geometry	
Select one of the following:	8-10
PHYS 201 General Physics	
& PHYS 202 and General Physics	
PHYS 207 University Physics I	
& PHYS 208 and University Physics II	
STAT 210 Basic Practice of Statistics (fulfills quantitative literacy))	3
or STAT 212 Concepts of Statistics	
Total Hours	16-18

### Major requirements

#### Chemistry core

CHEM 101 General Chemistry	4
& CHEZ 101 and General Chemistry Laboratory I	
CHEM 102 General Chemistry	4
& CHEZ 102 and General Chemistry Laboratory II	
CHEM 301 Organic Chemistry	5
& CHEZ 301 and Organic Chemistry Laboratory I	
CHEM 302 Organic Chemistry	5
& CHEZ 302 and Organic Chemistry Laboratory II	
CHEM 303 Physical Chemistry	5
& CHEZ 303 and Physical Chemistry Laboratory I	
CHEM 304 Physical Chemistry	3
CHEM 309 Quantitative Analysis	4
& CHEZ 309 and Quantitative Analysis Laboratory	
CHEM 320 Inorganic Chemistry I	3
CHEM 398 Professional Practices and Perspectives Seminar	1

#### Chemistry elective

Select at least one of the approved electives below (three credits minimum) or any 500-level CHEM class for which prerequisites have been met.	3
Total Hours	37

### Open electives

Select 19-35 open elective units	19-35
----------------------------------	-------

### Total minimum requirement 120 credits

#### Chemistry electives

CHEM/CLSE 306 Industrial Applications of Inorganic Chemistry	3
CHEM/MEDC 310 Medicinal Chemistry and Drug Design	3
CHEM 401 Applications of Instrumental Techniques in Organic and Forensic Chemistry	4
CHEM 403 Biochemistry I	3
CHEM 404 Biochemistry II	3
CHEM 406 Inorganic Chemistry II	5
& CHEZ 406 and Inorganic Chemistry Laboratory	
CHEM 409 Instrumental Analysis	5
& CHEZ 409 and Instrumental Analysis Laboratory	
CHEM 492 Independent Study	1-4
CHEM 493 Chemistry Internship	1-3
CHEM 510 Atomic and Molecular Structure	3
CHEZ 304 Physical Chemistry Laboratory II	2

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester	Hours
CHEM 101 General Chemistry	4
& CHEZ 101 and General Chemistry Laboratory I	
MATH 200 Calculus with Analytic Geometry	4
UNIV 111 Focused Inquiry I	3
Approved H&S diverse and global communities	3
Term Hours:	14

**Spring semester**

CHEM 102	General Chemistry	4
& CHEZ 102	and General Chemistry Laboratory II	
HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry	4
UNIV 112	Focused Inquiry II	3
Approved H&S human, social and political behavior		3
Term Hours:		15

**Sophomore year****Fall semester**

CHEM 301	Organic Chemistry	5
& CHEZ 301	and Organic Chemistry Laboratory I	
PHYS 201	General Physics	4-5
or PHYS 207	or University Physics I	
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S literature and civilization		3
Term Hours:		15-16

**Spring semester**

CHEM 302	Organic Chemistry	5
& CHEZ 302	and Organic Chemistry Laboratory II	
CHEM 309	Quantitative Analysis	4
& CHEZ 309	and Quantitative Analysis Laboratory	
PHYS 202	General Physics	4-5
or PHYS 208	or University Physics II	
Approved H&S science and technology		3
Term Hours:		16-17

**Junior year****Fall semester**

CHEM 303	Physical Chemistry	3
CHEM 320	Inorganic Chemistry I	3
STAT 210	Basic Practice of Statistics	3
Approved H&S general education elective		3
Open electives		3-6
Term Hours:		15-18

**Spring semester**

CHEM 304	Physical Chemistry	3
CHEM 398	Professional Practices and Perspectives Seminar	1
CHEZ 303	Physical Chemistry Laboratory I	2
Approved H&S general education elective		3
Experiential fine arts		1-3
Foreign language (101 level)		4
Open elective		3
Term Hours:		17-19

**Senior year****Fall semester**

Chemistry elective		3
Foreign language (102 level)		4
Open electives (upper-level if needed)		8
Term Hours:		15

**Spring semester**

Open electives (upper-level if needed)	13-15
Term Hours:	13-15
Total Hours:	120-129

## Chemistry, Bachelor of Science (B.S.) with a concentration in professional chemist

The curriculum in chemistry prepares students for graduate study in chemistry and related fields and for admission to schools of medicine, dentistry, pharmacy and veterinary medicine. It prepares students to teach in secondary schools or to work in chemical and industrial laboratories and in related fields of business and industry. The department also offers required and elective courses in chemistry to students in other programs of study.

The Department of Chemistry offers five areas of concentration for completing the Bachelor of Science in Chemistry: chemical science, professional chemist, professional chemist with honors, biochemistry and chemical modeling. With proper selection of electives, the degree satisfies admission requirements to most schools of medicine, dentistry, pharmacy and veterinary medicine.

The professional chemist concentration requires a greater number of chemistry courses, and is designed for students whose future studies or career plans involve chemistry as a central theme. With the proper combination of courses, this degree can be certified as meeting the requirements of the American Chemical Society.

## Learning outcomes

- **Structure:** Students will demonstrate understanding of the relationship between molecular structure and function.
- **Descriptive chemistry:** Students will be conversant with common chemical phenomena both symbolically and sensorially.
- **Measurement and numeracy:** Students will perform calculations needed to describe and model common chemical phenomena.
- **Communication:** Students will develop written and oral communication skills needed to explain chemical phenomena to novices and experts.
- **Literacy:** Students will search, read and assess scientific literature.
- **Laboratory skills:** Students will develop and practice laboratory bench and instrumentation skills.
- **Information processing:** Students will interpret tables, graphs, drawings and models.
- **Critical thinking:** Students will practice critical thinking and problem solving.

## Special requirements

Students must complete 49 credits in chemistry and 22 credits of collateral requirements.

A minimum grade of C is required in each prerequisite course:

CHEM 100	Introductory Chemistry (if required through placement qualifiers)	3
CHEM 101	General Chemistry	3
CHEM 102	General Chemistry	3
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3

## Degree requirements for Chemistry, Bachelor of Science (B.S.) with a concentration in professional chemist

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

MATH 200 & MATH 201	Calculus with Analytic Geometry and Calculus with Analytic Geometry	8
MATH 307	Multivariate Calculus	4
PHYS 207 & PHYS 208	University Physics I and University Physics II	10
Total Hours		22

### Major requirements

#### Chemistry core

CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5

CHEM 303 & CHEZ 303	Physical Chemistry and Physical Chemistry Laboratory I	5
CHEM 304 & CHEZ 304	Physical Chemistry and Physical Chemistry Laboratory II	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	4
CHEM 320	Inorganic Chemistry I	3
CHEM 398	Professional Practices and Perspectives Seminar	1

#### Chemistry electives

Select from the approved chemistry electives below (13 credits minimum, including at least two credits of laboratory) or any CHEM 500 level class for which prerequisites have been met.	13
Total Hours	49

### Open electives

Select three to 17 open elective credits	3-17
--	------

### Total minimum requirement 120 credits

#### Chemistry electives

CHEM/CLSE 306	Industrial Applications of Inorganic Chemistry	3
CHEM/MEDC 310	Medicinal Chemistry and Drug Design	3
CHEM 401	Applications of Instrumental Techniques in Organic and Forensic Chemistry	4
CHEM 403	Biochemistry I	3
CHEM 404	Biochemistry II	3
CHEM 406 & CHEZ 406	Inorganic Chemistry II and Inorganic Chemistry Laboratory <sup>1</sup>	5
CHEM 409 & CHEZ 409	Instrumental Analysis and Instrumental Analysis Laboratory <sup>1</sup>	5
CHEM 492	Independent Study	1-4
CHEM 493	Chemistry Internship	1-3
CHEM 510	Atomic and Molecular Structure	3

<sup>1</sup> These four courses are required to satisfy the requirements for the American Chemical Society certification of the professional chemist concentration. MATH 307 also is required for the American Chemical Society certification. Chemistry majors in the professional chemist concentration meet their statistics general education requirements by taking the required chemistry classes.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester			Hours
CHEM 101	General Chemistry		4
& CHEZ 101	and General Chemistry Laboratory I		
MATH 200	Calculus with Analytic Geometry		4
UNIV 101	Introduction to the University		1
UNIV 111	Focused Inquiry I		3
Approved H&S diverse and global communities			3
Term Hours:			15



**Spring semester**

CHEM 102	General Chemistry	4
& CHEZ 102	and General Chemistry Laboratory II	
HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry	4
UNIV 112	Focused Inquiry II	3
Approved H&S human, social and political behavior		3
Term Hours:		15

**Sophomore year****Fall semester**

CHEM 301	Organic Chemistry	5
& CHEZ 301	and Organic Chemistry Laboratory I	
PHYS 207	University Physics I	5
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S literature and civilization		3
Term Hours:		16

**Spring semester**

CHEM 302	Organic Chemistry	5
& CHEZ 302	and Organic Chemistry Laboratory II	
CHEM 309	Quantitative Analysis	4
& CHEZ 309	and Quantitative Analysis Laboratory	
PHYS 208	University Physics II	5
Approved H&S science and technology		3
Term Hours:		17

**Junior year****Fall semester**

CHEM 303	Physical Chemistry	5
& CHEZ 303	and Physical Chemistry Laboratory I	
CHEM 320	Inorganic Chemistry I	3
MATH 307	Multivariate Calculus	4
Foreign language (101 level)		4
Term Hours:		16

**Spring semester**

CHEM 304	Physical Chemistry	5
& CHEZ 304	and Physical Chemistry Laboratory II	
CHEM 398	Professional Practices and Perspectives Seminar	1
Approved H&S general education elective		3
Chemistry elective		3
Foreign language (102 level)		4
Term Hours:		16

**Senior year****Fall semester**

CHEM 409	Instrumental Analysis	5
& CHEZ 409	and Instrumental Analysis Laboratory	
Chemistry electives		6
Experiential fine arts		1-3
Term Hours:		12-14

**Spring semester**

Chemistry electives		4-6
Approved H&S general education elective		3

Open electives	6
Term Hours:	13-15
Total Hours:	120-124

## Chemistry, Bachelor of Science (B.S.) with a concentration in professional chemist with honors

The curriculum in chemistry prepares students for graduate study in chemistry and related fields and for admission to schools of medicine, dentistry, pharmacy and veterinary medicine. It prepares students to teach in secondary schools or to work in chemical and industrial laboratories and in related fields of business and industry. The department also offers required and elective courses in chemistry to students in other programs of study.

The Department of Chemistry offers five areas of concentration for completing the Bachelor of Science in Chemistry: chemical science, professional chemist, professional chemist with honors, biochemistry and chemical modeling. With proper selection of electives, the degree satisfies admission requirements to most schools of medicine, dentistry, pharmacy and veterinary medicine.

### Learning outcomes

- **Structure:** Students will demonstrate understanding of the relationship between molecular structure and function.
- **Descriptive chemistry:** Students will be conversant with common chemical phenomena both symbolically and sensorially.
- **Measurement and numeracy:** Students will perform calculations needed to describe and model common chemical phenomena.
- **Communication:** Students will develop written and oral communication skills needed to explain chemical phenomena to novices and experts.
- **Literacy:** Students will search, read and assess scientific literature.
- **Laboratory skills:** Students will develop and practice laboratory bench and instrumentation skills.
- **Information processing:** Students will interpret tables, graphs, drawings and models.
- **Critical thinking:** Students will practice critical thinking and problem solving.

### Special requirements

The professional chemist with honors concentration is an intensive, research-based option for students interested in developing a research focus. This option requires a 3.0 GPA in chemistry to be maintained after completing eight credits of chemistry courses. As part of the requirement for completing this concentration, an honors thesis is written and the work is presented as a seminar in the Department of Chemistry. With the proper combination of courses, this degree can be certified as meeting the requirements of the American Chemical Society.

CHEM 406 and CHEZ 406 and CHEM 409 and CHEZ 409 are required to satisfy the requirements for the American Chemical Society certification of the professional chemist concentration. MATH 307 also is required for the American Chemical Society certification.

Students must complete 49 credits in chemistry and 22 credits of collateral requirements. A minimum grade of C is required in each prerequisite course:

CHEM 100	Introductory Chemistry (if required through placement qualifiers)	3
CHEM 101	General Chemistry	3
CHEM 102	General Chemistry	3
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3

## Degree requirements for Chemistry, Bachelor of Science (B.S.) with a concentration in professional chemist with honors

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

MATH 200 & MATH 201	Calculus with Analytic Geometry and Calculus with Analytic Geometry	8
MATH 307	Multivariate Calculus	4
PHYS 207 & PHYS 208	University Physics I and University Physics II	10
Total Hours		22

### Major requirements

#### Chemistry core

CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 303 & CHEZ 303	Physical Chemistry and Physical Chemistry Laboratory I	5
CHEM 304 & CHEZ 304	Physical Chemistry and Physical Chemistry Laboratory II	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	4
CHEM 320	Inorganic Chemistry I	3
CHEM 398	Professional Practices and Perspectives Seminar	1
CHEM 492	Independent Study	6
CHEM 498	Honors Thesis	1

#### Junior chemistry electives

Select approved chemistry electives from junior list below (three credits minimum)	3
--	---

#### Senior chemistry electives

Select approved chemistry electives from senior list below (three credits minimum)	3
Total Hours	49

### Open electives

Select three to 17 open elective credits	3-17
--	------

### Total minimum requirement 120 credits

#### Junior chemistry electives

CHEM/CLSE 306	Industrial Applications of Inorganic Chemistry	3
CHEM/MEDC 310	Medicinal Chemistry and Drug Design	3
CHEM 401	Applications of Instrumental Techniques in Organic and Forensic Chemistry	4
CHEM 403	Biochemistry I	3
CHEM 404	Biochemistry II	3

#### Senior chemistry electives

CHEM/CLSE 306	Industrial Applications of Inorganic Chemistry	3
CHEM/MEDC 310	Medicinal Chemistry and Drug Design	3
CHEM 401	Applications of Instrumental Techniques in Organic and Forensic Chemistry	4
CHEM 403	Biochemistry I	3
CHEM 404	Biochemistry II	3
CHEM 406 & CHEZ 406	Inorganic Chemistry II and Inorganic Chemistry Laboratory <sup>1</sup>	5
CHEM 409 & CHEZ 409	Instrumental Analysis and Instrumental Analysis Laboratory <sup>1</sup>	5

CHEM 493	Chemistry Internship	1-3
CHEM 510	Atomic and Molecular Structure	3

<sup>1</sup> These four courses are required to satisfy the requirements for the American Chemical Society certification of the professional chemist concentration. MATH 307 also is required for the American Chemical Society certification. Chemistry majors in the professional chemist concentration meet their statistics general education requirements by taking the required chemistry classes.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
MATH 200	Calculus with Analytic Geometry	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
	Approved H&S diverse and global communities	3
Term Hours:		15

### Spring semester

CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry	4
UNIV 112	Focused Inquiry II	3
	Approved H&S human, social and political behavior	3
Term Hours:		15

### Sophomore year

Fall semester		Hours
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
PHYS 207	University Physics I	5
UNIV 200	Inquiry and the Craft of Argument	3
	Approved H&S literature and civilization	3
Term Hours:		16

### Spring semester

CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	4
PHYS 208	University Physics II	5
	Approved H&S science and technology	3
Term Hours:		17

### Junior year

Fall semester		Hours
CHEM 303 & CHEZ 303	Physical Chemistry and Physical Chemistry Laboratory I	5
CHEM 320	Inorganic Chemistry I	3
MATH 307	Multivariate Calculus	4
	Foreign language (101 level)	4
Term Hours:		16

### Spring semester

CHEM 304 & CHEZ 304	Physical Chemistry and Physical Chemistry Laboratory II	5
CHEM 398	Professional Practices and Perspectives Seminar	1
CHEM 492	Independent Study	2-4
	Foreign language (102 level)	4
	Junior chemistry elective	3
Term Hours:		15-17

### Senior year

Fall semester		Hours
CHEM 492	Independent Study	4
	Approved H&S general education elective	3
	Experiential fine arts	1-3
	Open elective	3
	Senior chemistry elective	3
Term Hours:		14-16

### Spring semester

CHEM 498	Honors Thesis	1
	Approved H&S general education elective	3
	Open electives	8
Term Hours:		12
Total Hours:		120-124

## Chemistry, minor in

The minor in chemistry requires the following courses:

CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
	Select one additional three-credit upper-level (300-400) chemistry course	3
Total Hours		21

A minimum of nine upper-level chemistry credits must be taken at VCU. Consult course descriptions for prerequisites in mathematics and physics.

## Department of English

**David E. Latané, Ph.D.**

Professor and interim chair

**Nicholas Sharp, Ph.D.**

Assistant professor and associate chair

**Katherine Saunders Nash, Ph.D.**

Associate professor and director of undergraduate studies

**Les Harrison, Ph.D.**

Associate professor and director of the M.A. program

**Kathleen Graber**

Associate professor and director of the M.F.A. program

**Eric Garberson**

Associate professor of art history and director of the MATX program

english.vcu.edu (<http://www.english.vcu.edu>)

The purpose of the Department of English is to teach students to see their worlds with clarity and respond to them with sensitivity, through reading and writing. Students are invited to read and explore a diversity of texts created in different times and voices and then to respond to these texts variously and critically, situating them within their contexts and discerning their important aesthetic features, rhetorical elements and social functions.

Students in this department also are encouraged to express themselves in expository or imaginative works that engage thought and feeling, evince purpose clearly, marshal appropriate evidence and observe principles of rhetorical decorum.

The Department of English offers a Bachelor of Arts in English, as well as minors in American studies (in conjunction with the Department of History), British studies, English (for non-English majors), writing and creative writing, the Master of Arts in English and the Master of Fine Arts in Creative Writing, and a doctoral program leading to a Ph.D. in Media, Art, and Text. Use the program search navigation to view individual program descriptions and curricula, or visit the department's website at english.vcu.edu (<http://www.english.vcu.edu>) for additional information.

- English, Bachelor of Arts (B.A.) (p. 96)
- American studies, minor in (p. 98)
- British studies, minor in (p. 99)
- Creative writing, minor in (p. 99)
- English, minor in (p. 99)
- Writing, minor in (p. 100)

## English, Bachelor of Arts (B.A.)

The Bachelor of Arts program in English requires a minimum of 120 credits, with at least 33 upper-level (numbered 300 to 499) credits in the major. Six of the 33 credits may be taken in upper-level foreign literature read in the original language or upper-level foreign literature in English translation (FLET). UNIV 111 and UNIV 112 (or equivalent) and a 200-level literature course (or equivalent) do not count toward the major.

English majors must take a minimum of nine credits at the 400 level, including the senior seminar, ENGL 499. Students may expect 300-level courses in the department to emphasize historical breadth, while 400-level courses will offer in-depth focus. ENGL 410-ENGL 414, ENGL 480-ENGL 485 and ENGL 499 will include British, American or other literatures (world, transatlantic, etc.). For specific topics, see the Schedule of Classes; majors are encouraged to choose 400-level courses from more than one literary tradition (British, American, other literatures).

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Read closely a wide variety of texts from diverse traditions and recognize how texts are shaped by historical, geographical and generic contexts.

- Write clearly and effective compositions that reflect their understanding of literary genres, critical perspectives and rhetorical purposes.
- Employ various strategies for research in order to write persuasive essays.

## Degree requirements for English, Bachelor of Arts (B.A.)

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Foreign language (201) by course or placement	0-3
Foreign language (202 or 205) by course or placement	0-3
Total Hours	0-6

### Major requirements

ENGL 301	Introduction to the English Major	3
ENGL 499	Senior Seminar in English	3

#### Linguistics, writing, criticism

Select one course from two of the following three areas:	6
Linguistics	
ENGL/ANTH/LING Introduction to Linguistics 390	

ENGL/LING 450	Modern Grammar
ENGL/LING 451	History of the English Language
ENGL/GSWS/LING 452	Language and Gender
ENGL/LING 453	Modern Rhetoric
ENGL/INTL 454/ ANTH 450	Cross-cultural Communication
ENGL/LING 455/ ANTH 448/FRLG 448	Language, Culture and Cognition

#### Writing

ENGL/CRJS 302	Legal Writing
ENGL 303	Writing for Stage and/or Screen
ENGL 304	Advanced Writing
ENGL 305	Writing Poetry
ENGL 307	Writing Fiction
ENGL 309	Writing Creative Nonfiction
ENGL 310	Business and Technical Report Writing
ENGL 367	Writing Process and Practice
ENGL 388	Writing in the Workplace
ENGL/TEDU 389	The Teaching of Writing Skills
ENGL 433/THEA 426	Advanced Dramatic Writing
ENGL 435	Advanced Poetry Writing
ENGL 437	Advanced Fiction Writing
ENGL 439	Advanced Creative Nonfiction Writing
ENGL 491	Topics in Writing (by specific topic)

#### Criticism

ENGL 311	Introduction to Literary Theory
ENGL/GSWS 352	Feminist Literary Theory
ENGL 391	Topics in Literature (by specific topic)
ENGL 445	Form and Theory of Poetry
ENGL 447	Form and Theory of Fiction
ENGL 449	Form and Theory of Creative Nonfiction
ENGL 485	Literary Theory and Criticism: ____

#### Literature

Select six credits in literature prior to 1700 <sup>1</sup> 6

ENGL 320	Early Literary Traditions
ENGL 321	English Drama From 900 to 1642
ENGL 322	Medieval Literature: Old English to Middle English
ENGL 324	Late Medieval Literature
ENGL 325	Early Modern Literature
ENGL 326	Shakespeare in Context
ENGL/RELS 361	The Bible as Literature
ENGL 391	Topics in Literature (by specific topic)
ENGL 401	Shakespeare
ENGL 402	Chaucer
ENGL 403	Milton
ENGL 410	Medieval Studies: ____
ENGL 411	Early Modern Studies: ____
ENGL 480	Authors: ____ (by specific topic)
ENGL 481	Genres: ____ (by specific topic)

ENGL 482	Literary Topics: ____ (by specific topic)
ENGL 483	Literary Texts and Contexts: ____ (by specific topic)
ENGL 484	Literary Movements: ____ (by specific topic)

Select six credits in literature between 1700 and 1945 <sup>1</sup> 6

ENGL 330	Restoration and 18th-century Drama
ENGL 331	Restoration and 18th-century British Literature
ENGL 332	18th-century British Novels and Narratives
ENGL 335	British Literature of the Romantic Era
ENGL 336	19th-century British Novels and Narratives
ENGL 337	Victorian Poetry
ENGL 340	Early 20th-century British Literature
ENGL 371	American Literary Beginnings
ENGL 372	U.S. Literature: 1820-1865
ENGL 373	U.S. Literature: 1865-1913
ENGL 374	U.S. Literature: Modernism
ENGL 377	19th-century U.S. Novels and Narratives
ENGL 391	Topics in Literature (by specific topic)
ENGL 412	18th-century Studies: ____
ENGL 413	19th-century Studies: ____
ENGL 480	Authors: ____ (by specific topic)
ENGL 481	Genres: ____ (by specific topic)
ENGL 482	Literary Topics: ____ (by specific topic)
ENGL 483	Literary Texts and Contexts: ____ (by specific topic)
ENGL 484	Literary Movements: ____ (by specific topic)
AMST 391	Topics in American Studies (by specific topic)
AMST 394	Perspectives in American Studies (by specific topic)

Select three credits in the literature of diversity <sup>1</sup> 3

ENGL/GSWS 353	Women Writers
ENGL/GSWS 354	Lesbian Texts/Queer Theories
ENGL/AFAM 363/ INTL 366	African Literature
ENGL 364	Mythology and Folklore
ENGL/AFAM 365/ INTL 367	Caribbean Literature
ENGL 366	Writing and Social Change: ____
ENGL/AFAM 379	African-American Literature : Beginnings Through the Harlem Renaissance
ENGL 381	Multiethnic Literature
ENGL 391	Topics in Literature (by specific topic)
ENGL 480	Authors: ____ (by specific topic)
ENGL 481	Genres: ____ (by specific topic)
ENGL 482	Literary Topics: ____ (by specific topic)
ENGL 483	Literary Texts and Contexts: ____ (by specific topic)



ENGL 484	Literary Movements: ____ (by specific topic)	
<b>Required electives/optional focus</b>		
Select six to nine required elective/optional focus credits (see below)	6-9	
Total Hours	33-36	

<sup>1</sup> No single course may be used to satisfy two of these requirements.

## Open electives

Select 35-55 open elective credits 35-55

## Total minimum requirement 120 credits

### Required electives/optional focus

As part of the English major, electives allow students to take courses of particular interest to them. Electives may not be used to satisfy any other requirements for the major, except ENGL 499. In consultation with an adviser, students are encouraged to cluster their elective courses in one of the following focus areas.

- Literary studies (including courses grouped by historical period, genre, region, national and minority traditions, thematics, literary movement, literary influence, etc.)
- Writing (including both expository and creative writing)
- Criticism and theory (including approaches to literature, form and theory courses, etc.)
- Cultural studies (including courses that focus on race, class, gender, ethnicity, film, popular culture, etc.)
- Linguistics (including courses that focus on history of the language, cross-cultural communications, etc.)

Students are advised to consult the full listing and description of English courses before planning their elective courses.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
MATH 131	Introduction to Contemporary Mathematics	3
or STAT 208	or Statistical Thinking	
UNIV 111	Focused Inquiry I	3
	Approved H&S diverse and global communities	3
	Approved H&S human, social, and political behavior	3
	Foreign language (101)	4
Term Hours:		16

### Spring semester

UNIV 112	Focused Inquiry II	3
	Approved H&S literature and civilization	3
	Approved H&S science and technology	3
	Experiential fine arts	3
	Foreign language (102)	4
Term Hours:		16

### Sophomore year

#### Fall semester

ENGL 215	Textual Analysis	3
HUMS 202	Choices in a Consumer Society	1
UNIV 200	Inquiry and the Craft of Argument	3
	Approved H&S General Education elective	3
	Foreign language (201)	3
	Open elective	3
Term Hours:		16

### Spring semester

ENGL 301	Introduction to the English Major	3
	ENGL 300 level: Literature between 1700 and 1945	3
	ENGL 300 or 400 level: Linguistics, writing or criticism	3
	Foreign language (202 or 205)	3
	Open elective	3
Term Hours:		15

### Junior year

#### Fall semester

	ENGL 300 or 400 level: Linguistics, writing or criticism	3
	ENGL 300 or 400 level: Literature of diversity group	3
	ENGL 300 or 400 level: Literature prior to 1700	3
	Open electives	6
Term Hours:		15

#### Spring semester

	ENGL 300 or 400 level: Literature prior to 1700	3
	ENGL 300 or 400 level: Literature between 1700 and 1945	3
	ENGL 400-level elective	3
	Open electives	3-6
Term Hours:		12-15

### Senior year

#### Fall semester

	ENGL 400-level elective	3
	Open electives	12
Term Hours:		15

#### Spring semester

ENGL 499	Senior Seminar in English	3
	Open electives	12
Term Hours:		15
Total Hours:		120-123

## American studies, minor in

### Richard A. Fine, Ph.D.

Professor and coordinator, American studies

The minor in American studies consists of at least 18 upper-level credits to be distributed as follows:

Select six credits in American studies (AMST) courses	6
Select three credits in humanities electives	3
Select three credits in social science electives	3
Select six credits in either humanities, social science or other approved electives, or in independent study	6
Total Hours	18

All courses selected to fulfill distribution areas must deal with American materials and topics. A list of recommended courses and electives is available from the coordinator.

## British studies, minor in

**David Latané, Ph.D.**

Professor and coordinator, British studies

The minor in British studies requires at least 18 credits, 15 of which must be taken at the 300 level or above. Courses must come from at least two different departments.

### Core 1: Modern Britain

Select one of the following: 3

ENGL 341	British Literature and Culture After 1945
ENGL 391	Topics in Literature
or ENGL 491	Topics in Writing
HUMS 391	Special Topics in the Humanities and Sciences
HIST 325	History of Modern Britain

### Core 2: British origins

Select one of the following: 3

ENGL 401	Shakespeare
ENGL 402	Chaucer
ENGL 403	Milton
ENGL 412	18th-century Studies: ____
HIST 324	History of Early Modern Britain

### Core 3: Britain's impact on the world

Select one of the following: 3

ENGL 365/AFAM 356/INTL 367	Caribbean Literature
ENGL 371	American Literary Beginnings
HIST 326	The British Empire
HIST 345	American Colonies, 1450-1776
HIST 346	The American Revolutionary Era, 1763-1800
HIST 376/AFAM 392	Caribbean History to 1838
HIST 383/AFAM 389	History of Southern Africa

### Approved electives

Select nine credits from the core lists above or from the following: 9

ARTH 425	Neoclassicism, Romanticism, Realism and Impressionism through Fin-de-Siecle
ARTH 439	Studies in 20th-century Art
ENGL 203	British Literature I
ENGL 204	British Literature II
ENGL 321	English Drama From 900 to 1642
ENGL 322	Medieval Literature: Old English to Middle English
ENGL 325	Early Modern Literature
ENGL 330	Restoration and 18th-century Drama

ENGL 331	Restoration and 18th-century British Literature
ENGL 332	18th-century British Novels and Narratives
ENGL 335	British Literature of the Romantic Era
ENGL 336	19th-century British Novels and Narratives
ENGL 337	Victorian Poetry
ENGL 340	Early 20th-century British Literature
ENGL 410	Medieval Studies: ____
ENGL 411	Early Modern Studies: ____
ENGL 499	Senior Seminar in English
HIST 391	Topics in History
HIST 490	Seminar in History
HONR 399	Honors Module
PHIL 104	Modern Western Philosophy
RELS 362	Shakespeare and Religion
THEA 491	Topics in Theatre (as appropriate)

Total Hours 18

## Creative writing, minor in

The minor in creative writing consists of 18 credits in upper-level courses, including:

Select at least 15 credits in upper-level courses from the following: <sup>1</sup> 15-18

ENGL 303	Writing for Stage and/or Screen
ENGL 305	Writing Poetry
ENGL 307	Writing Fiction
ENGL 309	Writing Creative Nonfiction
ENGL 433/THEA 426	Advanced Dramatic Writing
ENGL 435	Advanced Poetry Writing
ENGL 437	Advanced Fiction Writing
ENGL 439	Advanced Creative Nonfiction Writing
ENGL 445	Form and Theory of Poetry
ENGL 447	Form and Theory of Fiction
ENGL 491	Topics in Writing

Three credits may be taken from these other writing and writing-related courses: 0-3

ENGL/CRJS 302	Legal Writing
ENGL 304	Advanced Writing
ENGL 310	Business and Technical Report Writing
ENGL 388	Writing in the Workplace
ENGL 493	English Internship

Total Hours 18

<sup>1</sup> Note that some of these courses may be repeated (with different topics) for credit.

## English, minor in

The minor in English consists of 18 credits in upper-level (300-400) English courses, including:

ENGL 301	Introduction to the English Major (recommended, but not necessary to complete the minor)	3
Select at least three credits in each of the following areas:		9-18
literature before 1700		
literature between 1700 and 1945		
linguistics, advanced writing or criticism		
literature of diversity		
Three credits may be taken in foreign literature in English translation		3
Three credits may be taken in ENGL 492		3
Total Hours		18

English majors may not minor in English.

## Writing, minor in

The minor in writing consists of 18 credit hours in upper-level writing courses, including:

ENGL 304	Advanced Writing <sup>1</sup>	3
Select 15 credits from the following areas:		15
Creative writing:		
ENGL 303	Writing for Stage and/or Screen	
ENGL 305	Writing Poetry	
ENGL 307	Writing Fiction	
ENGL 309	Writing Creative Nonfiction	
ENGL 433/THEA 426	Advanced Dramatic Writing	
ENGL 435	Advanced Poetry Writing	
ENGL 437	Advanced Fiction Writing	
ENGL 439	Advanced Creative Nonfiction Writing	
ENGL 491	Topics in Writing	
Professional writing and rhetoric:		
ENGL/CRJS 302	Legal Writing	
ENGL 310	Business and Technical Report Writing	
ENGL 388	Writing in the Workplace	
ENGL/LING 453	Modern Rhetoric	
ENGL 491	Topics in Writing	
ENGL 493	English Internship	
MASC 203	Journalism Writing	
MASC 301	Graphics for Journalism	
MASC 305	Copy Editing	
MASC 341	Feature and Article Writing	
Total Hours		18

<sup>1</sup> This course should be taken as early in the minor as possible.

Since special permission is required for some of these courses, it is important that the student contact the director of undergraduate studies early for advising. No upper-level mass communications courses may be taken until a student has completed MASC 203.

## Department of Forensic Science

Tal Simmons, Ph.D.

Professor, chair and graduate program director

**Catherine Connon, Ph.D.**

Instructor and undergraduate program director

forensicscience.vcu.edu (<http://forensicscience.vcu.edu>)

The Department of Forensic Science offers programs leading to bachelor's and master's degrees.

The Bachelor of Science is for students who plan a career or graduate study in the forensic sciences. The forensic science program provides students with fundamental learning in forensic laboratory analyses and crime scene investigation, with academic emphasis in biology, chemistry and criminal justice. The program offers three concentrations: forensic biology, forensic chemistry and physical evidence. Students will select one of the three concentrations prior to the second semester of their sophomore year. The B.S. in Forensic Science supplies students with the necessary skills for professional careers in forensic laboratories, public and private, basic research laboratories, clinical laboratories, and/or to pursue graduate studies. Students also will be prepared to pursue advanced degrees in the physical sciences, biological sciences, forensic science, law, allied health and medicine, to name a few.

The Master of Science in Forensic Science prepares students for careers as forensic scientists in government and private laboratories. Students receive in-depth exposure to specializations within the field, including drug analysis, DNA analysis, trace evidence, criminalistics and legal issues.

For more information visit [forensicscience.vcu.edu](http://forensicscience.vcu.edu) (<http://forensicscience.vcu.edu>).

- Forensic Science, Bachelor of Science (B.S.) with a concentration in:
  - Forensic biology (p. 100)
  - Forensic chemistry (p. 103)
  - Physical evidence (p. 105)

## Forensic Science, Bachelor of Science (B.S.) with a concentration in forensic biology

The forensic biology concentration requires an additional 33 credits in biology, forensic science and elective credits beyond the core requirements and is well-suited for students interested in graduate study or careers in the forensic biology section of forensic laboratories. Students also will be prepared for work in molecular biology laboratories in both the public and private sectors. Students completing the forensic biology concentration will be eligible for a minor in chemistry. Additionally, students who complete BIOL 317 will be eligible for a minor in biology.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Demonstrate a basic understanding of the laws of criminal procedure and rules of evidence
- Demonstrate proper crime scene investigation and reconstruction
- Demonstrate ethical and professional duties and responsibilities of the forensic scientist

- Be able to apply basic principles and laboratory procedures of biology to forensic science
- Demonstrate capabilities, use, potential and limitations of forensic laboratory theory and techniques

## Special requirements

The forensic science program requires a minimum of 120 credits including completion of the College of Humanities and Sciences general education requirements, 46-48 forensic science core program credits and 33 (forensic biology), 30 (forensic chemistry) or 31 (physical evidence) concentration-specific credits.

Students in the forensic science program must receive a minimum grade of C in all FRSC and FRSZ courses, as well as the following:

CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301	Organic Chemistry	3
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
PHYS 201 or PHYS 207	General Physics University Physics I	4-5

Additionally, a minimum grade of C in all CHEM/CHEZ courses is required for enrollment in all courses for which they are a prerequisite.

For the forensic biology concentration, a minimum of three additional credit hours of advanced study (200- to 500-level) in an area of specialization must be taken. It is recommended that these credits be CRJS, BIOL, PHYS, MATH or CHEM courses. Additionally, the forensic biology track requires an additional elective of a 300-, 400- or 500-level forensic science or natural science elective. FRSC 202 is not applicable for the major.

## Degree requirements for Forensic Science, Bachelor of Science (B.S.) with a forensic biology concentration

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Required courses:		3-10
MATH 200	Calculus with Analytic Geometry (fulfills University Core quantitative literacy)	
PHIL 201	Critical Thinking About Moral Problems (fulfills H&S literature and civilization)	
STAT 210	Basic Practice of Statistics	
Total Hours		3-10

### Major requirements

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 300	Cellular and Molecular Biology	3
BIOL 310	Genetics	3
BIOZ 476	Biology Capstone Laboratory	2
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 403	Biochemistry I	3
FRSC 300	Survey of Forensic Science	3
FRSC 309	Scientific Crime Scene Investigation	3
FRSC 365	Forensic Microscopy	4
FRSC 375	Forensic Evidence, Law and Criminal Procedure	3
FRSC 385	Forensic Serology	3
FRSC/BIOL 438	Forensic Molecular Biology	3
FRSZ/BIOZ 438	Forensic Molecular Biology Laboratory	2

FRSC 490	Professional Practices in Forensic Science	3
PHYS 201	General Physics	4-5
or PHYS 207	University Physics I	
PHYS 202	General Physics	4-5
or PHYS 208	University Physics II	
STAT 314	Applications of Statistics	4
Total Hours		73-75

### Concentration electives

Select three credits in BIOL/BIOZ, CHEM/CHEMZ, CRJS, FRSC/FRSZ, MATH or PHYS (200- to 500-level)	3
Select three credits in FRSC or natural science elective (300- to 500-level)	3
Total Hours	6

### Open electives

Select zero to six open elective credits	0-6
Total Hours	0-6

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
BIOL 151	Introduction to Biological Sciences I	4
& BIOZ 151	and Introduction to Biological Science Laboratory I	
CHEM 101	General Chemistry	4
& CHEZ 101	and General Chemistry Laboratory I	
UNIV 111	Focused Inquiry I	3
Experiential fine arts course		1-3
Term Hours:		12-14

#### Spring semester

BIOL 152	Introduction to Biological Sciences II	4
& BIOZ 152	and Introduction to Biological Science Laboratory II	
CHEM 102	General Chemistry	4
& CHEZ 102	and General Chemistry Laboratory II	
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry	4
UNIV 112	Focused Inquiry II	3
Term Hours:		16

#### Sophomore year

Fall semester		Hours
BIOL 300	Cellular and Molecular Biology	3
CHEM 301	Organic Chemistry	5
& CHEZ 301	and Organic Chemistry Laboratory I	
STAT 210	Basic Practice of Statistics	3
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		14

#### Spring semester

CHEM 302	Organic Chemistry	5
& CHEZ 302	and Organic Chemistry Laboratory II	
FRSC 300	Survey of Forensic Science	3
PHIL 201	Critical Thinking About Moral Problems (fulfills H&S literature and civilization course)	3
STAT 314	Applications of Statistics	4
Term Hours:		15

#### Junior year

##### Fall semester

FRSC 309	Scientific Crime Scene Investigation	3
FRSC 375	Forensic Evidence, Law and Criminal Procedure	3
PHYS 201	General Physics	4-5
or PHYS 207	or University Physics I	
BIOL/BIOZ, CHEM/CHEZ, CRJS, FRSC/FRSZ, MATH or PHYS (200- to 500-level)		3-4
Approved H&S diverse and global communities course		3
Term Hours:		16-18

##### Spring semester

BIOL 310	Genetics	3
FRSC 365	Forensic Microscopy	4
PHYS 202	General Physics	4-5
or PHYS 208	or University Physics II	
Approved H&S science and technology course		3-4
Foreign language (101-level) or open electives		0-4
Term Hours:		14-20

#### Senior year

##### Fall semester

BIOZ 476	Biology Capstone Laboratory	2
CHEM 403	Biochemistry I	3
FRSC 385	Forensic Serology	3
FRSC or natural science elective (300- to 500-level)		3
Approved H&S General Education elective		3-4
Foreign language (102-level) or open electives		0-4
Term Hours:		14-19

##### Spring semester

FRSC 438	Forensic Molecular Biology	3
or BIOL 438	or Forensic Molecular Biology	
FRSC 490	Professional Practices in Forensic Science	3
FRSZ 438	Forensic Molecular Biology Laboratory	2
or BIOZ 438	or Forensic Molecular Biology Laboratory	
Approved H&S human, social and political behavior course		3-4
Approved H&S General Education elective		3-4
Term Hours:		14-16
Total Hours:		115-132



## Forensic Science, Bachelor of Science (B.S.) with a concentration in forensic chemistry

The forensic chemistry concentration requires an additional 30 credits in chemistry, calculus, forensic science and elective credits beyond the core requirements and is offered for those students who are interested in graduate study or careers in the chemical analysis of forensic evidence, including the areas of drug analysis, toxicology and trace evidence analysis. Students also will be prepared for work in private analytical laboratories. Students completing the forensic chemistry concentration will be eligible for a minor in chemistry.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate a basic understanding of the laws of criminal procedure and rules of evidence
- Demonstrate proper crime scene investigation and reconstruction
- Demonstrate ethical and professional duties and responsibilities of the forensic scientist
- Be able to apply basic principles and laboratory procedures of chemistry to forensic science
- Demonstrate capabilities, use, potential and limitations of forensic laboratory theory and techniques

### Special requirements

The forensic science program requires a minimum of 120 credits including completion of the College of Humanities and Sciences general education requirements, 46-48 forensic science core program credits and 33 (forensic biology), 30 (forensic chemistry) or 31 (physical evidence) concentration-specific credits.

Students in the forensic science program must receive a minimum grade of C in all FRSC and FRSZ courses, as well as the following:

CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301	Organic Chemistry	3
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
PHYS 201 or PHYS 207	General Physics University Physics I	4-5

Additionally, a grade of C grade or better in all CHEM/CHEZ courses is required for enrollment in all courses for which they are a prerequisite.

For the forensic chemistry concentration, a minimum of three additional credit hours of advanced study (200- to 500-level) in an area of specialization must be taken. It is recommended that these credits be

CRJS, BIOL, PHYS, MATH or CHEM courses. FRSC 202 is not applicable for the major.

## Degree requirements for Forensic Science, Bachelor of Science (B.S.) with a forensic chemistry concentration

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Required courses:		3 - 10
MATH 200	Calculus with Analytic Geometry (fulfills University Core quantitative literacy)	
PHIL 201	Critical Thinking About Moral Problems (fulfills H&S literature and civilization)	
STAT 210	Basic Practice of Statistics	
Total Hours		3-10

### Major requirements

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4

CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 303 & CHEZ 303	Physical Chemistry and Physical Chemistry Laboratory I	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	4
CHEM 409 & CHEZ 409	Instrumental Analysis and Instrumental Analysis Laboratory	5
FRSC 300	Survey of Forensic Science	3
FRSC 309	Scientific Crime Scene Investigation	3
FRSC 365	Forensic Microscopy	4
FRSC 375	Forensic Evidence, Law and Criminal Procedure	3
FRSC 400 & FRSZ 400	Forensic Chemistry and Forensic Chemistry Laboratory	5
FRSC 490	Professional Practices in Forensic Science	3
MATH 201	Calculus with Analytic Geometry	4
PHYS 201 or PHYS 207	General Physics University Physics I	4-5
PHYS 202 or PHYS 208	General Physics University Physics II	4-5
STAT 314	Applications of Statistics	4
Total Hours		73-75

### Concentration electives

Select three credits in BIOL/BIOZ, CHEM/CHEZ, CRJS, FRSC/ FRSZ, MATH or PHYS (200- to 500-level)	3
Total Hours	3

### Open electives

Select zero to nine open elective credits	0-9
Total Hours	0-9

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
UNIV 111	Focused Inquiry I	3
Experiential fine arts course		1-3
Term Hours:		12-14

#### Spring semester

CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry	4
STAT 210	Basic Practice of Statistics	3
UNIV 112	Focused Inquiry II	3
Term Hours:		15

#### Sophomore year

Fall semester		
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
PHYS 201 or PHYS 207	General Physics or University Physics I	4-5
STAT 314	Applications of Statistics	4
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		16-17

#### Spring semester

CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	4
MATH 201	Calculus with Analytic Geometry	4
PHYS 202 or PHYS 208	General Physics or University Physics II	4-5
Term Hours:		17-18

#### Junior year

Fall semester		
CHEM 303 & CHEZ 303	Physical Chemistry and Physical Chemistry Laboratory I	5
FRSC 300	Survey of Forensic Science	3
PHIL 201	Critical Thinking About Moral Problems	3
Approved H&S diverse and global communities course		3
Term Hours:		14

#### Spring semester

FRSC 309	Scientific Crime Scene Investigation	3
FRSC 365	Forensic Microscopy	4
FRSC 375	Forensic Evidence, Law and Criminal Procedure	3
BIOL/BIOZ, CHEM/CHEZ, CRJS, FRSC/FRSZ, MATH or PHYS (200- to 500-level)		3
Foreign language (101-level) or open electives		0-4
Term Hours:		13-17

#### Senior year

Fall semester		
CHEM 409 & CHEZ 409	Instrumental Analysis and Instrumental Analysis Laboratory	5
Approved H&S General Education elective		3-4
Approved H&S science and technology course		3-4
Foreign language (102-level) or open elective		0-4
Term Hours:		11-17

#### Spring semester

FRSC 400	Forensic Chemistry	5
& FRSZ 400	and Forensic Chemistry Laboratory	
FRSC 490	Professional Practices in Forensic Science	3
Approved H&S General Education elective		3-4
Approved H&S human, social and political behavior course		3-4
Term Hours:		14-16
Total Hours:		112-128

## Forensic Science, Bachelor of Science (B.S.) with a concentration in physical evidence

The physical evidence concentration requires an additional 31 credits in chemistry, criminal justice, forensic science and elective credits beyond the core requirements and is offered for those students who are interested in graduate study or careers in latent fingerprint examination, the analysis of impression evidence, as well as firearm and toolmark analyses. Students also will be prepared for work in private analytical laboratories.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate a basic understanding of the laws of criminal procedure and rules of evidence
- Demonstrate proper crime scene investigation and reconstruction
- Demonstrate ethical and professional duties and responsibilities of the forensic scientist
- Be able to apply basic principles and laboratory procedures of physics and chemistry to forensic science
- Demonstrate capabilities, use, potential and limitations of forensic laboratory theory and techniques

### Special requirements

The forensic science program requires a minimum of 120 credits including completion of the College of Humanities and Sciences general education requirements, 46-48 forensic science core program credits and 33 (forensic biology), 30 (forensic chemistry) or 31 (physical evidence) concentration-specific credits.

Students in the forensic science program must receive a minimum grade of C in all FRSC and FRSZ courses, as well as the following:

CHEM 101	General Chemistry	4
& CHEZ 101	and General Chemistry Laboratory I	
CHEM 102	General Chemistry	4
& CHEZ 102	and General Chemistry Laboratory II	
CHEM 301	Organic Chemistry	3
BIOL 151	Introduction to Biological Sciences I	4
& BIOZ 151	and Introduction to Biological Science Laboratory I	
BIOL 152	Introduction to Biological Sciences II	4
& BIOZ 152	and Introduction to Biological Science Laboratory II	
PHYS 201	General Physics	4-5

or PHYS 207	University Physics I	
-------------	----------------------	--

Additionally, a grade of C grade or better in all CHEM/CHEZ courses is required for enrollment in all courses for which they are a prerequisite.

For the physical evidence concentration, students must complete five credits of 300- to 500-level forensic science or natural science elective coursework, with a minimum of one laboratory course. Additionally, a minimum of 10 additional credit hours of advanced study (200- to 500-level) in an area of specialization must be taken. It is recommended that these credits be CRJS, BIOL, PHYS, MATH or CHEM courses. FRSC 202 is not applicable for the major.

## Degree requirements for Forensic Science, Bachelor of Science (B.S.) with a physical evidence concentration

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play	Focused Inquiry I	3
course video for Focused Inquiry I		
UNIV 112 Play	Focused Inquiry II	3
course video for Focused Inquiry II		
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Required courses:		3 - 10
MATH 200	Calculus with Analytic Geometry (fulfills University Core quantitative literacy)	
PHIL 201	Critical Thinking About Moral Problems (fulfills H&S literature and civilization)	

STAT 210	Basic Practice of Statistics	
Total Hours		3-10

## Major requirements

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	4
CHEM 320	Inorganic Chemistry I	3
FRSC 300	Survey of Forensic Science	3
FRSC 309	Scientific Crime Scene Investigation	3
FRSC 365	Forensic Microscopy	4
FRSC 375	Forensic Evidence, Law and Criminal Procedure	3
FRSC 385	Forensic Serology	3
FRSC 410	Forensic Pattern Evidence	3
FRSC 412	Forensic Analysis of Firearms and Toolmarks	3
FRSC 490	Professional Practices in Forensic Science	3
FRSC 566	Advanced Crime Scene Investigation	3
PHYS 201 or PHYS 207	General Physics University Physics I	4-5
PHYS 202 or PHYS 208	General Physics University Physics II	4-5
STAT 314	Applications of Statistics	4
Total Hours		69-71

## Concentration electives

Select two credits in FRSC or natural science elective (300- to 500-level)	2
Select six credits in BIOL/BIOZ, CHEM/CHEZ, CRJS, FRSC/FRSZ, MATH or PHYS (200- to 500-level)	6
Total Hours	8

## Open electives

Select zero to eight open elective credits	0-8
Total Hours	0-8

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
UNIV 111	Focused Inquiry I	3
Experiential fine arts course		1-3
Term Hours:		12-14

### Spring semester

CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry	4
STAT 210	Basic Practice of Statistics	3
UNIV 112	Focused Inquiry II	3
Term Hours:		15

### Sophomore year

Fall semester		
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	4
STAT 314	Applications of Statistics	4
UNIV 200	Inquiry and the Craft of Argument	3
Foreign language (101-level) or open electives		0-4
Term Hours:		16-20

### Spring semester

CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
FRSC 300	Survey of Forensic Science	3
BIOL/BIOZ, CHEM/CHEZ, CRJS, FRSC/FRSZ, MATH or PHYS (200- to 500-level)		3
Approved H&S human, social and political behavior course		3-4
Foreign language (102-level) or open electives		0-4
Term Hours:		14-19

### Junior year

Fall semester		
FRSC 309	Scientific Crime Scene Investigation	3
FRSC 365	Forensic Microscopy	4
PHYS 201 or PHYS 207	General Physics or University Physics I	4-5
Approved H&S diverse and global communities course		3
Term Hours:		14-15

### Spring semester

FRSC 385	Forensic Serology	3
PHYS 202 or PHYS 208	General Physics or University Physics II	4-5
BIOL/BIOZ, CHEM/CHEZ, CRJS, FRSC/FRSZ, MATH or PHYS (200- to 500-level)		3

Approved H&S science and technology course			3-4
Term Hours:			13-15
<b>Senior year</b>			
<b>Fall semester</b>			
CHEM	320	Inorganic Chemistry I	3
FRSC	375	Forensic Evidence, Law and Criminal Procedure	3
FRSC	410	Forensic Pattern Evidence	3
PHIL	201	Critical Thinking About Moral Problems	3
Approved H&S General Education elective			3-4
Term Hours:			15-16
<b>Spring semester</b>			
FRSC	412	Forensic Analysis of Firearms and Toolmarks	3
FRSC	490	Professional Practices in Forensic Science	3
FRSC	566	Advanced Crime Scene Investigation	3
FRSC or natural science elective (300- to 500-level)			2
Approved H&S General Education elective			3-4
Term Hours:			14-15
Total Hours:			113-129

## Department of Gender, Sexuality and Women's Studies

**Kathleen Ingram, Ph.D.**

Associate professor and interim chair

gsws.vcu.edu (<http://gsws.vcu.edu>)

Gender, sexuality and women's studies provides a broad interpretation and view of diversity, including the interdisciplinary, cross-cultural examination of women's perspectives and experiences, masculinity and femininity, and heterosexuality and alternate sexualities as culturally constructed and socially experienced.

- Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.) (p. 107)
- Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.) with a concentration in:
  - Health and science (p. 110)
- Gender, Sexuality and Women's Studies, minor in (p. 113)

## Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.)

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Be conversant in feminist epistemology
- Analyze through a feminist lens the social, cultural, artistic, literary, historical, economic, political and scientific forces and accomplishments that shape the lived experiences of women and people of diverse sexualities and genders

- Display a working knowledge of online databases and library resources requisite to conducting contemporary and archival research
- Analyze data, refute bias and exercise informed judgment in problem-solving related to the lives of diverse people and to issues of social justice
- Synthesize information and formulate clearly articulated arguments
- Integrate complex thoughts into written and spoken discourse
- Present clear, organized and coherent arguments as demonstrated through oral and written assignments
- Be conversant in the ethical dimensions of gender, sexuality and women's issues
- Critique civic engagement from a feminist perspective
- Display a working knowledge of social injustice and advocacy
- Understand feminist theorizing across disciplinary and cultural contexts for both methodology and epistemology and analyze and evaluate problems and questions by applying the intersection of knowledge, gender, race, class, culture, power and knower influence
- Identify and comprehend issues of social justice, and analyze their effects on gender and sexual minorities, and women and girls in the U.S. and around the world

## Special requirements

A Bachelor of Arts in Gender, Sexuality and Women's Studies requires a total of 120 credits with 30 credits in GSWS courses and at least 15 of those credits in upper-level courses. Students may choose a general interdisciplinary program or a health and science concentration.

All students must complete the general education requirements for the Bachelor of Arts in the College of Humanities and Sciences. All students also must complete core course requirements of GSWS 201 and GSWS 401.

The general interdisciplinary program requires that students take either GSWS 301 or GSWS 352/ENGL 352, plus one three-credit course from each perspective area: diversity/international perspectives on gender, sexuality and women; humanities perspectives on women on gender, sexuality and women; social science perspectives on women on gender, sexuality and women; and health and science. The remaining credits in the major are electives, but must be GSWS courses or courses cross-listed with GSWS. These electives may include GSWS 391 and GSWS 492. Note, however, that an independent study is permitted only after the student has an agreement with a supervising faculty member and permission from the major's adviser.

## Degree requirements for Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.)

### General Education requirements

University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4



Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
Total Hours	21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

#### Collateral requirements

BIOL 101	Biological Concepts (fulfills H&S science and technology)	0-3
or BIOL 151	Introduction to Biological Sciences I	
Total Hours		0-3

#### Major requirements

GSWS 201	Introduction to Gender, Sexuality and Women's Studies	3
GSWS/ENGL 352	Feminist Literary Theory	3
or GSWS 301	Feminist Social Theory	
GSWS diversity/international perspectives on gender, sexuality and women (200- to 400-level)		3
GSWS humanities perspectives on women on gender, sexuality and women (200- to 400-level)		3
GSWS social science perspectives on women on gender, sexuality and women (200- to 400-level)		3
GSWS health and science perspectives (300- to 400-level)		3
GSWS 401	Topical Senior Seminar (capstone)	3
GSWS electives (two of three courses must be upper-level)		9
Total Hours		30

#### Open electives

Select 41-58 open elective credits	41-58
------------------------------------	-------

#### Total minimum requirement 120 credits

##### Perspective areas

Note: A course listed in two different areas may not be used to fulfill both area requirements for the major. Some courses may have prerequisites to meet before enrollment.

##### Diversity/international perspectives on gender, sexuality and women

GSWS/AFAM/SOCY 305	African American Family in Social Context	3
GSWS/AFAM/POLI 318	Politics of Race, Class and Gender	3
GSWS 339/340/HIST 339/340	History of Women in Europe I	3
GSWS/ENGL 353	Women Writers (when international writers)	3
GSWS/ENGL 354	Lesbian Texts/Queer Theories	3
GSWS 366/INTL 366/POLI 366	Women and Global Politics	3
GSWS/RELS 371	Women in Islam	3
GSWS/INTL/RELS 372	Global Women's Spirituality	3
GSWS 380	Lesbian and Bisexual Women	3
GSWS/AFAM/HIST 390	Africa and the Americas: Slavery, Gender and Race	3
GSWS/FLET/INTL 391	Topics in Gender, Sexuality and Women's Studies (Topics in Foreign Literature in English Translation - when the topic is women Francophone writers)	3
GSWS 450	Black Feminist Thought	3
<b>Humanities perspectives on women on gender, sexuality and women</b>		
GSWS/ENGL 236	Women in Literature	3
GSWS 339/340/HIST 339/340	History of Women in Europe I	3
GSWS/HIST 341	American Women's History I	3
GSWS/ENGL 352	Feminist Literary Theory	3
GSWS/ENGL 353	Women Writers	3
GSWS/ENGL 354	Lesbian Texts/Queer Theories	3
GSWS 355	Queer Cinema	3
GSWS 356	Open Minds	3
GSWS/RELS 371	Women in Islam	3
GSWS/INTL/RELS 372	Global Women's Spirituality	3
GSWS/RELS 373	Gender and the Bible	3
GSWS/AFAM/HIST 390	Africa and the Americas: Slavery, Gender and Race	3
GSWS 391/ENGL 410	Topics in Gender, Sexuality and Women's Studies (Medieval Studies: _____ - when the topic is women)	3
GSWS 391/ENGL 411	Topics in Gender, Sexuality and Women's Studies (Early Modern Studies: _____ - when the topic is women)	3
GSWS 391/ENGL 412	Topics in Gender, Sexuality and Women's Studies (18th-century Studies - when the topic is women)	3
GSWS 391/ENGL 491	Topics in Gender, Sexuality and Women's Studies (Topics in Writing - when the topic is women)	3

GSWS/FLET 391	Topics in Gender, Sexuality and Women's Studies (Topics in Foreign Literature in English Translation - when the topic women Francophone writers)	3	GSWS 391/ENVS 491	Topics in Gender, Sexuality and Women's Studies (Topics in Environmental Studies - when the topic is women, nature and the environment)	3
GSWS/PHIL 391	Topics in Gender, Sexuality and Women's Studies (Topics in Philosophy - when the topic is women and science)	3	GSWS/FLET 391	Topics in Gender, Sexuality and Women's Studies (Topics in Foreign Literature in Translation - when the topic is women and madness in Francophone literature)	3
GSWS 450	Black Feminist Thought	3	GSWS 391/MASC 491	Topics in Gender, Sexuality and Women's Studies (Topics in Mass Communications - when the topic is women and technology)	3
GSWS/ENGL/LING 452	Language and Gender	3	GSWS/PHIL 391	Topics in Gender, Sexuality and Women's Studies (Topics in Philosophy - when the topic is women and science)	3
<b>Social science perspectives on women on gender, sexuality and women</b>			GSWS/POLI 391	Topics in Gender, Sexuality and Women's Studies (Topics in Political Science - when the topic is women and health care policy)	3
GSWS 301	Feminist Social Theory	3	GSWS/POLI 391	Topics in Gender, Sexuality and Women's Studies (Topics in Political Science - when the topic is reproductive technologies, ethics and policies)	3
GSWS/ANTH/SOCY 304	Sociology of Families	3	GSWS 392	Women's Health Care Across the Life Span	3
GSWS/AFAM/SOCY 305	African American Family in Social Context	3	GSWS 393	Feminist Research and Methods	3
GSWS/POLI 316	Women and the Law	3	GSWS/AFAM 491	Topics in Women's Studies (when the topic is anthropological and international perspectives on women and health)	3
GSWS/POLI/AFAM 318	Politics of Race, Class and Gender	3			
GSWS/POLI 319	Women and American Politics	3			
GSWS/SOCY 333	Gender in Society	3			
GSWS/SOCY 334	Sociology of Women	3			
GSWS/PSYC 335	Psychology of Women	3			
GSWS/SOCY 336	Violence Against Women	3			
GSWS/POLI 366/INTL 368	Women and Global Politics	3			
GSWS 380	Lesbian and Bisexual Women	3			
GSWS/CRJS 382	Gender, Crime and Justice	3			
GSWS/POLI 391	Topics in Gender, Sexuality and Women's Studies (Topics in Political Science - when the topic is gender politics in popular culture)	3			
GSWS 391	Topics in Gender, Sexuality and Women's Studies (Topics in Political Science - when the topic is contemporary issues in feminist theory)	3			
GSWS/POLI 391	Topics in Gender, Sexuality and Women's Studies (Topics in Political Science - when the topic is women and health care policy)	3			
GSWS/POLI 391	Topics in Gender, Sexuality and Women's Studies (Topics in Political Science - when the topic is reproductive technologies, ethics and policies)	3			
GSWS 450	Black Feminist Thought	3			
GSWS/AFAM 491	Topics in Women's Studies (when the topic is anthropological and international perspectives on women and health)	3			
<b>Health and science</b>					
GSWS/SOCY 333	Gender in Society	3			
GSWS/PSYC 335	Psychology of Women	3			
GSWS/SOCY 336	Violence Against Women	3			

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester			Hours
STAT 208	Statistical Thinking (or other approved quantitative literacy course)		3
UNIV 101	Introduction to the University		1
UNIV 111	Focused Inquiry I		3
Approved H&S general education elective			3-4
Approved H&S human, social and political behavior			3-4
Term Hours:			13-15

#### Spring semester

BIOL 101 or BIOL 151	Biological Concepts or Introduction to Biological Sciences I		3
GSWS 201	Introduction to Gender, Sexuality and Women's Studies (fulfills H&S diverse and global)		3
HUMS 202	Choices in a Consumer Society		1
UNIV 112	Focused Inquiry II		3
Approved H&S literature and civilization			3
Open elective (or BIOZ 101 or BIOZ 151 lab to accompany lecture above)			1
Term Hours:			14

**Sophomore year****Fall semester**

GSWS 301 or GSWS 352	Feminist Social Theory or Feminist Literary Theory	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S general education elective		3-4
Foreign language (101-level)		4
GSWS diversity/international perspectives on gender, sexuality and women (200- to 400-level)		3
Term Hours:		16-17

**Spring semester**

GSWS humanities perspectives on women on gender, sexuality and women (200- to 400-level)	3
GSWS social science perspectives on women on gender, sexuality and women (200- to 400-level)	3
Experiential fine arts	1-3
Foreign language (102-level)	4
Open elective (or approved H&S science and technology if not satisfied above)	3
Term Hours:	14-16

**Junior year****Fall semester**

GSWS health and science perspectives (300- to 400-level)	3
GSWS elective	3
Open electives	9
<hr/>	
Term Hours:	15

**Spring semester**

GSWS elective (upper-level)	3
Open electives	15
<hr/>	
Term Hours:	18

**Senior year****Fall semester**

GSWS 401	Topical Senior Seminar (capstone)	3
Open electives		12
Term Hours:		15

**Spring semester**

GSWS elective (upper-level)	3
Open electives	12
Term Hours:	15
Total Hours:	120-125

accomplishments that shape the lived experiences of women and people of diverse sexualities and genders

- Display a working knowledge of online databases and library resources requisite to conducting contemporary and archival research
- Analyze data, refute bias and exercise informed judgment in problem-solving related to the lives of diverse people and to issues of social justice
- Synthesize information and formulate clearly articulated arguments
- Integrate complex thoughts into written and spoken discourse
- Present clear, organized and coherent arguments as demonstrated through oral and written assignments
- Be conversant in the ethical dimensions of gender, sexuality and women's issues
- Critique civic engagement from a feminist perspective
- Display a working knowledge of social injustice and advocacy
- Understand feminist theorizing across disciplinary and cultural contexts for both methodology and epistemology and analyze and evaluate problems and questions by applying the intersection of knowledge, gender, race, class, culture, power and knower influence
- Identify and comprehend issues of social justice, and analyze their effects on gender and sexual minorities, and women and girls in the U.S. and around the world

**Special requirements**

A Bachelor of Arts in Gender, Sexuality and Women's Studies requires a total of 120 credits with 30 credits in GSWS courses and at least 15 of these credits in upper-level courses. Students may choose a general interdisciplinary program or a health and science concentration.

All students must complete the general education requirements for the Bachelor of Arts in the College of Humanities and Sciences. All students also must complete core course requirements of GSWS 201 and GSWS 401.

Students in the health and science concentration must take GSWS 301 and GSWS 393, in addition to three credits from the diversity/international perspectives on gender, sexuality and women and nine credits from the health and science perspectives area. STAT 210 is recommended in this concentration, and an additional three credits (for a total of six credits) in a natural science are required.

The remaining credits in the major are electives, but must be GSWS courses or courses cross-listed with GSWS. These electives may include GSWS 391 and GSWS 492. Note, however, that an independent study is permitted only after the student has an agreement with a supervising faculty member and permission from the major's adviser.

## Degree requirements Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.) with a concentration in health and science

**General Education requirements****University Core Education Curriculum (minimum 21 credits)**

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
--	-------------------	---

## Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.) with a concentration in health and science

**Learning outcomes**

Upon completing this program, students will know and know how to do the following:

- Be conversant in feminist epistemology
- Analyze through a feminist lens the social, cultural, artistic, literary, historical, economic, political and scientific forces and

UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

#### Collateral requirements

Select one sequence from:		0-4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory (fulfills H&S science and technology)	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
Natural science: 200-level or higher biology course or 100-level or higher chemistry or physics course		3
Total Hours		3-7

#### Major requirements

GSWS 201	Introduction to Gender, Sexuality and Women's Studies	3
GSWS 301 or GSWS 352	Feminist Social Theory or Feminist Literary Theory	3
GSWS 393	Feminist Research and Methods	3
GSWS 401	Topical Senior Seminar (capstone)	3
GSWS diversity/international perspectives on gender, sexuality and women (200- to 400-level)		3
GSWS health and science perspectives (300- to 400-level)		9
GSWS electives		6
Total Hours		30

#### Open electives

Select 30-55 open elective credits

30-55

#### Total minimum requirement 120 credits

##### Perspective areas

Note: A course listed in two different areas may not be used to fulfill both area requirements for the major. Some courses may have prerequisites to meet before enrollment.

##### Diversity/international perspectives on gender, sexuality and women

GSWS/AFAM/SOCY 305	African American Family in Social Context	3
GSWS/AFAM/POLI 318	Politics of Race, Class and Gender	3
GSWS 339/340/HIST 339/340	History of Women in Europe I	3
GSWS/ENGL 353	Women Writers (when international writers)	3
GSWS/ENGL 354	Lesbian Texts/Queer Theories	3
GSWS 366/INTL 368/POLI 366	Women and Global Politics	3
GSWS/RELS 371	Women in Islam	3
GSWS/INTL/RELS 372	Global Women's Spirituality	3
GSWS 380	Lesbian and Bisexual Women	3
GSWS/AFAM/HIST 390	Africa and the Americas: Slavery, Gender and Race	3
GSWS/FLET/INTL 391	Topics in Gender, Sexuality and Women's Studies (Topics in Foreign Literature in English Translation - when the topic is women Francophone writers)	3
GSWS 450	Black Feminist Thought	3

##### Humanities perspectives on women on gender, sexuality and women

GSWS/ENGL 236	Women in Literature	3
GSWS 339/340/HIST 339/340	History of Women in Europe I	3
GSWS/HIST 341	American Women's History I	3
GSWS/ENGL 352	Feminist Literary Theory	3
GSWS/ENGL 353	Women Writers	3
GSWS/ENGL 354	Lesbian Texts/Queer Theories	3
GSWS 355	Queer Cinema	3
GSWS 356	Open Minds	3
GSWS/RELS 371	Women in Islam	3
GSWS/INTL/RELS 372	Global Women's Spirituality	3
GSWS/RELS 373	Gender and the Bible	3
GSWS/AFAM/HIST 390	Africa and the Americas: Slavery, Gender and Race	3
GSWS 391/ENGL 410	Topics in Gender, Sexuality and Women's Studies (Medieval Studies: _____ - when the topic is women)	3

GSWS 391/ENGL 411	Topics in Gender, Sexuality and Women's Studies (Early Modern Studies: _____ - when the topic is women)	3	GSWS 450	Black Feminist Thought	3
GSWS 391/ENGL 412	Topics in Gender, Sexuality and Women's Studies (18th-century Studies - when the topic is women)	3	GSWS/AFAM 491	Topics in Women's Studies (when the topic is anthropological and international perspectives on women and health)	3
GSWS 391/ENGL 491	Topics in Gender, Sexuality and Women's Studies (Topics in Writing - when the topic is women)	3	<b>Health and science</b>		
GSWS/FLET 391	Topics in Gender, Sexuality and Women's Studies (Topics in Foreign Literature in English Translation - when the topic women Francophone writers)	3	GSWS/SOCY 333	Gender in Society	3
GSWS/PHIL 391	Topics in Gender, Sexuality and Women's Studies (Topics in Philosophy - when the topic is women and science)	3	GSWS/PSYC 335	Psychology of Women	3
GSWS 450	Black Feminist Thought	3	GSWS/SOCY 336	Violence Against Women	3
GSWS/ENGL/LING 452	Language and Gender	3	GSWS 391/ENVS 491	Topics in Gender, Sexuality and Women's Studies (Topics in Environmental Studies - when the topic is women, nature and the environment)	3
GSWS 457/ARTH 357	Women, Art and Society	3	GSWS/FLET 391	Topics in Gender, Sexuality and Women's Studies (Topics in Foreign Literature in Translation - when the topic is women and madness in Francophone literature)	3
<b>Social science perspectives on women on gender, sexuality and women</b>			GSWS 391/MASC 491	Topics in Gender, Sexuality and Women's Studies (Topics in Mass Communications - when the topic is women and technology)	3
GSWS 301	Feminist Social Theory	3	GSWS/PHIL 391	Topics in Gender, Sexuality and Women's Studies (Topics in Philosophy - when the topic is women and science)	3
GSWS/ANTH/SOCY 304	Sociology of Families	3	GSWS/POLI 391	Topics in Gender, Sexuality and Women's Studies (Topics in Political Science - when the topic is women and health care policy)	3
GSWS/AFAM/SOCY 305	African American Family in Social Context	3	GSWS/POLI 391	Topics in Gender, Sexuality and Women's Studies (Topics in Political Science - when the topic is reproductive technologies, ethics and policies)	3
GSWS/POLI 316	Women and the Law	3	GSWS 392	Women's Health Care Across the Life Span	3
GSWS/POLI/AFAM 318	Politics of Race, Class and Gender	3	GSWS 393	Feminist Research and Methods	3
GSWS/POLI 319	Women and American Politics	3	GSWS/AFAM 491	Topics in Women's Studies (when the topic is anthropological and international perspectives on women and health)	3
GSWS/SOCY 333	Gender in Society	3	What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.		
GSWS/SOCY 334	Sociology of Women	3	<b>Freshman year</b>		
GSWS/PSYC 335	Psychology of Women	3	<b>Fall semester</b>		<b>Hours</b>
GSWS/SOCY 336	Violence Against Women	3	STAT 208	Statistical Thinking (or other approved quantitative literacy course)	3
GSWS/POLI 366/INTL 368	Women and Global Politics	3	UNIV 101	Introduction to the University	1
GSWS 380	Lesbian and Bisexual Women	3	UNIV 111	Focused Inquiry I	3
GSWS/CRJS 382	Gender, Crime and Justice	3	Approved H&S general education elective		3-4
GSWS/POLI 391	Topics in Gender, Sexuality and Women's Studies (Topics in Political Science - when the topic is gender politics in popular culture)	3	Approved H&S human, social and political behavior		3-4
GSWS 391	Topics in Gender, Sexuality and Women's Studies (Topics in Political Science - when the topic is contemporary issues in feminist theory)	3	Term Hours:		13-15
GSWS/POLI 391	Topics in Gender, Sexuality and Women's Studies (Topics in Political Science - when the topic is women and health care policy)	3	<b>Spring semester</b>		
GSWS/POLI 391	Topics in Gender, Sexuality and Women's Studies (Topics in Political Science - when the topic is reproductive technologies, ethics and policies)	3	BIOL 101	Biological Concepts	4
			& BIOZ 101	and Biological Concepts Laboratory	



or			
BIOL 151	Introduction to Biological Sciences I	-	
& BIOZ 151	and Introduction to Biological Science Laboratory I		
GSWS 201	Introduction to Gender, Sexuality and Women's Studies (fulfills H & S diverse and global communities)	3	
HUMS 202	Choices in a Consumer Society	1	
UNIV 112	Focused Inquiry II	3	
Approved H&S literature and civilization		3	
Term Hours:		14	
<b>Sophomore year</b>			
<b>Fall semester</b>			
GSWS 301	Feminist Social Theory	3	
UNIV 200	Inquiry and the Craft of Argument	3	
Approved H&S general education elective		3-4	
Foreign language (101-level)		4	
Natural science (200-level or higher biology, or 100-level or higher chemistry or physics) (CHEM 110 or PHYS 103 fulfills H&S science and technology or H&S general education elective, if needed)		3	
Term Hours:		16-17	
<b>Spring semester</b>			
GSWS diversity/international perspectives on gender, sexuality and women (200- to 400-level)		3	
GSWS health and science perspectives (300- to 400-level)		3	
Experiential fine arts		1-3	
Foreign language (102-level)		4	
Open elective (or approved H&S science and technology if not satisfied above)		3	
Term Hours:		14-16	
<b>Junior year</b>			
<b>Fall semester</b>			
GSWS 393	Feminist Research and Methods	3	
GSWS health and science perspectives (300- to 400-level)		3	
Open electives		9	
Term Hours:		15	
<b>Spring semester</b>			
GSWS elective		3	
GSWS health and science perspectives (300- to 400-level)		3	
Open electives		12	
Term Hours:		18	
<b>Senior year</b>			
<b>Fall semester</b>			
GSWS 401	Topical Senior Seminar (capstone)	3	
Open electives		12	
Term Hours:		15	
<b>Spring semester</b>			
GSWS elective		3	
Open electives		12	
Term Hours:		15	
Total Hours:		120-125	

## Gender, sexuality and women's studies, minor in

The minor in gender, sexuality and women's studies consists of 18 credits in GSWS courses or courses cross-listed with GSWS courses. Students are required to take the following:

GSWS 201	Introduction to Gender, Sexuality and Women's Studies	3
Select a feminist theory course		3
Select a course addressing diversity/international perspectives on gender, sexuality and women		3
Select electives in GSWS courses or courses cross-listed with GSWS courses		9
Total Hours		18

## Department of History

811 and 813 South Cathedral Place  
P.O. Box 842001  
Richmond, Virginia 23284  
Phone: (804) 828-1635  
Fax: (804) 828-7085

[history.vcu.edu](http://history.vcu.edu) (<http://history.vcu.edu>)

### John T. Kneebone, Ph.D.

Associate professor and chair

### Peter Stone

Assistant professor, assistant to the chair and faculty adviser for undergraduate studies

### Sarah Meacham, Ph.D.

Associate professor and director of graduate studies

### Kathleen Murphy

Administrative coordinator

The Department of History offers programs at the graduate and undergraduate levels, specializing in a multidimensional analysis of the human past. Faculty research interests vary among thematic, topical, national or chronological emphases. For more information regarding the department and its specialty areas, visit the website at [history.vcu.edu](http://history.vcu.edu) (<http://history.vcu.edu>).

- History, Bachelor of Arts (B.A.) (p. 113)
- History, minor in (p. 115)
- Medical humanities, minor in (p. 115)

## History, Bachelor of Arts (B.A.)

The Bachelor of Arts in History requires a minimum of 120 credits, with at least 36 of those credits in history. Students must complete HIST 300 with a minimum grade of C prior to enrolling in more than six credits of 300- or 400-level history courses.

The history curriculum exposes students to a multidimensional analysis of the human past. Knowledge gained through such analysis not only has the intrinsic appeal of any disciplined intellectual inquiry, but also constitutes an indispensable basis for active citizenship and for critical thinking about the society in which the student lives.

Historical training at the undergraduate level leads to personal and social awareness within the rich tradition of the liberal arts. It also provides students an ideal preparation for a wide range of careers and further professional study.

Students in the program can take advantage of a wide range of courses with thematic, topical, national or chronological emphases to fulfill requirements and electives. Students should consult with their advisers each semester to design a program that meets these requirements and suits their interests and career objectives.

## Learning outcomes

Upon completing this program, students will be able to demonstrate knowledge of:

1. The various types of sources historians employ in their research and work.
  2. The need for skepticism and informed judgment in historical studies, and of the role of biases and frames of reference in historical research.
  3. How and why historians often reach different conclusions with reference to issues of fact, causation, interpretation and significance.
  4. How to summarize, analyze and evaluate scholarly and/or popular works dealing with the historical past, and will also demonstrate such critical, analytical and evaluative skills both orally and in writing.
  5. The procedures of library research, awareness of the significance of varying methodologies of historical research (such as historical archaeology, oral history, quantitative methods) and will demonstrate the ability to understand and interpret historical evidence when presented in the form of documents, maps, graphs and statistical tables.
  6. The basic skills and aptitudes in the investigation of a historical topic/issue and in the presentation of his/her findings in a literate, documented, logically argued and coherently organized research paper.
- Finally, students will demonstrate:**
7. An appreciation of the forces of change and continuity, or the appropriateness (or inappropriateness) of analogies between one set of historical experiences/circumstances and another, and of the extent to which historical experience and knowledge can (or should) serve as a guide for current action.

## Honors in history

To earn a Bachelor of Arts degree with honors in history students must have a minimum cumulative GPA of 3.0 or a 3.0 average for their junior year, with at least a 3.3 GPA in history courses. Students also must have completed an honors paper in history. See the department adviser or chair for information about the paper requirements. Official certification of the award will be presented to students upon their graduation.

## Degree requirements for History, Bachelor of Arts (B.A.)

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	3
--	---

UNIV 112 Play course video for Focused Inquiry II	3
UNIV 200 Inquiry and the Craft of Argument	3
Approved humanities/fine arts	3
Approved natural/physical sciences	3-4
Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
Total Hours	21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202 Choices in a Consumer Society	1
Approved H&S diverse and global communities	3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)	
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
Total Hours	11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Foreign language through the 202 or 205 level (by course or placement testing)	0-6
--	-----

### Major requirements

HIST 300 Introduction to Historical Study	3
HIST 493 Internship (capstone)	2-4
or HIST 490 Seminar in History	
Historical survey courses (100- and 200-level HIST)	12
Upper-level HIST (301-499, except 490 or 493)	18
Total Hours	35-37

Note: Major requires at least six credits from each of three areas (may be satisfied by 100-level and 300-level HIST courses chosen above): a) Europe, b) United States, and c) Africa, Asia, Latin America or the Middle East.

### Open electives

Select 32-52 open elective credits (from the college, School of the Arts, School of Business and School of Education)	32-52
---	-------

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Freshman year**

<b>Fall semester</b>			<b>Hours</b>
UNIV 101	Introduction to the University		1
UNIV 111	Focused Inquiry I		3
Approved quantitative literacy			3-4
Approved H&S diverse and global communities			3
Historical survey (100-level HIST)			3
Term Hours:			13-14

**Spring semester**

HUMS 202	Choices in a Consumer Society		1
UNIV 112	Focused Inquiry II		3
Approved H&S human, social and political behavior			3-4
Approved H&S general education elective			3-4
Historical survey (100-level HIST)			3
Term Hours:			13-15

**Sophomore year****Fall semester**

UNIV 200	Inquiry and the Craft of Argument		3
Approved H&S literature and civilization			3
Approved H&S general education elective			3-4
Foreign language (101-level)			4
Historical survey (100-level HIST)			3
Term Hours:			16-17

**Spring semester**

HIST 300	Introduction to Historical Study		3
Approved H&S science and technology			3-4
Experiential fine arts			1-3
Foreign language (102-level)			4
Historical survey (100-level HIST)			3
Term Hours:			14-17

**Junior year****Fall semester**

Foreign language (201-level) or open elective			3
Open electives			6
Upper-level HIST (301-499)			6
Term Hours:			15

**Spring semester**

Foreign language (202 or 205) or open elective			3
Open electives			6
Upper-level HIST (301-499)			6
Term Hours:			15

**Senior year****Fall semester**

Open electives			9
Upper-level HIST (301-499)			6
Term Hours:			15

**Spring semester**

HIST 490 or HIST 493	Seminar in History or Internship		3-4
----------------------------	-------------------------------------	--	-----

Open electives	12
Term Hours:	15-16
Total Hours:	116-124

**Total minimum requirement 120 credits****History, minor in**

The minor in history consists of 18 credits in history, 12 of which must be at the upper level (300-400), including:

Select at least one three-credit course in three of the following regions:	9
Africa	
North America	
Asia	
Europe	
Latin America	
Middle East	
Select additional history courses	9
Total Hours	18

**Medical humanities, minor in**

The minor in medical humanities consists of 18 credits in courses that address the non-scientific aspects of professional health care training. To complete the minor, students must complete each of the following courses:

ARTH 361	The Human Condition: An Arts Perspective	3
PHIL 213	Ethics and Health Care	3
SCTS 301/ENGL 369	Illness Narratives	3

**Core I: History of science, technology and medicine**

Select one of the following:		3
HIST 389	History in Film: ____ (science film topics only)	
HIST/SCTS 392	Revolutions in Science I	
HIST/SCTS 393	Revolutions in Science II	
HIST/SCTS 397	Genetics and Society: 1865 to the Present	
HIST/SCTS 398	History of Medicine and Public Health: ____	
SCTS 300	Introduction to Science and Technology Studies	

**Core II: Cross-cultural and diversity perspectives that impact health care**

Select one of the following:		3
AFAM/ANTH/ INTL/GSW 309	Global Women's Health	
AFAM 310	African American Health: Health Disparities	
ANTH 301/BIOL 341	Human Evolution	
ANTH 391	Topics in Anthropology (medical anthropology topic only)	

ENGL/GSWWS 353	Women Writers
ENGL/GSWWS 354	Lesbian Texts/Queer Theories
GSWS 392	Women's Health Care Across the Life Span
RELS 368	
WRLD 220	Human Rights and Literature
<b>Core III: Psych-social dimensions of healing and caregiving</b>	
Select one of the following:	
HCMG 300	Health Care Organization and Services
PSYC 304	Life Span Developmental Psychology
PSYC 308	Stress and its Management
PSYC 412	Health Psychology
SOCY/GSWWS 333	Gender in Society
SOCY 445	Medical Sociology
Total Hours	18

## Department of Kinesiology and Health Sciences

**Edmund O. Acevedo, Ph.D.**

Professor and chair

khs.vcu.edu (<http://khs.vcu.edu>)

The Department of Kinesiology and Health Sciences offers programs that prepare students to pursue careers that utilize exercise interventions for both healthy and diseased populations and/or careers designed for students who wish to enter a health care-related field (that does not require licensure, certification or registry status). The department offers one undergraduate degree program; the Bachelor of Science with either the exercise science concentration or the health science concentration.

Along with the undergraduate program, the department also offers a Master of Science in Health and Movement Sciences and Doctor of Philosophy in Rehabilitation and Movement Science.

The M.S. in Health and Movement Sciences program provides advanced course work for students interested in the application of health and movement science principles to exercise science, teaching and sports medicine. This program has a central focus on the sciences and is flexible enough so that students, with the assistance of an adviser, can design a program that truly meets their professional goals.

The Doctor of Philosophy in Rehabilitation and Movement Science program is interdisciplinary in nature and includes faculty from the departments of Kinesiology and Health Sciences, Physical Therapy, and Physical Medicine and Rehabilitation. Students choose a concentration in either exercise physiology or neuromusculoskeletal dynamics.

The department also offers a post-baccalaureate undergraduate Certificate in Health Sciences that is designed for students who hold a baccalaureate degree in a non-science area and wish to pursue their undergraduate pre-health sciences requirements at VCU.

For more information, consult the department's website at [khs.vcu.edu](http://khs.vcu.edu) (<http://khs.vcu.edu>).

- Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in:
  - Exercise science (p. 116)

- Health Science (p. 118)

- Health Sciences, Certificate in (Post-baccalaureate undergraduate certificate) (p. 120)

## Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in exercise science

The exercise science concentration prepares students to serve as leaders of fitness, health and conditioning programs in corporate, commercial, university and clinical settings that provide exercise programming for apparently healthy individuals and those with chronic disease. Career paths include exercise physiologist, corporate fitness director, cardiopulmonary rehabilitation specialist, strength and conditioning specialist and wellness director. Additionally, the exercise science concentration prepares students for graduate study in exercise science or athletic training and offers an excellent option for those students who want to obtain the pre-requisites for post-graduate study in physical therapy, occupational therapy and medicine.

### Learning outcomes

- Graduates will be prepared to serve as leaders of fitness, health and conditioning programs in all sectors.
- Graduates will be able to demonstrate knowledge of core content as evidenced on a basic exercise science competencies checklist.
- Graduates will be able to demonstrate the ability to apply rehabilitative principles and skills in exercise preparation.
- Graduates will be able to demonstrate a conceptual understanding of health related behaviors in the treatment of hypokinetic diseases.
- Graduates will be able to demonstrate the ability to administer wellness programs, assess and prescribe appropriate exercise regimes, and recommend healthful dietary strategies.

### Special requirements

A minimum grade of C is required in all HPEX courses and electives. Students cannot use more than one HPEX course (three credits) from the health science core as an elective. All students must attempt a department-approved national certification examination prior to graduation.

## Degree requirements for Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in exercise science

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4

Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
Total Hours	21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Select from:

BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory (fulfills approved science and technology and University Core natural/physical science)	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 205	Basic Human Anatomy	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
MATH 151 or MATH 200	Precalculus Mathematics (fulfills University Core quantitative literacy) Calculus with Analytic Geometry	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PHYS 201	General Physics	4
PSYC 101	Introduction to Psychology (fulfills approved human, social and political behavior)	4
PSYC 304	Life Span Developmental Psychology	3
STAT 210	Basic Practice of Statistics	3
Total Hours		22

### HPEX core

HPEX 300	Health Care Delivery in the U.S.	3
HPEX 310	Fitness and Health	3
HPEX 395	Clinical Experience I	3
HPEX 495	Clinical Experience II (fulfills senior capstone)	6
Total Hours		15

### Exercise science core

HPEX 350	Nutrition	3
HPEX 371	Psychology of Physical Activity	3
HPEX 374	Musculoskeletal Structure and Movement	4
HPEX 375 & HPEZ 375	Physiology of Exercise and Physiology of Exercise Laboratory	4
HPEX 380	Resistance Training for Health and Performance	3
HPEX 440	Chronic Disease and Exercise Management	3
HPEX 441	Assessment and Exercise Intervention in Health and Disease	3
HPEX 470	Exercise Programming and Leadership	3
HPEX 475	Cardiovascular Pathophysiology and Pharmacology	3
HPEX 480	Professional Certification Seminar	1
Total Hours		30

### Electives

Select from the course list below	7-21
Total Hours	7-21

### Total minimum requirement 120 credits

#### Electives

ANTH 301	Human Evolution	3
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 201	Human Biology	3
BIOL 209	Medical Microbiology	3
BIOL 217	Principles of Nutrition	3
BIOL 300	Cellular and Molecular Biology	3
BIOL 308	Vertebrate Histology	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 403	Biochemistry I	3
HPEX 250	Medical Terminology	1
HPEX 271	Safety, First Aid and CPR	3
HPEX: 300-level and 400-level courses		
HUMS 391	Special Topics in the Humanities and Sciences	1-4
PHIL 201	Critical Thinking About Moral Problems	3
PHYS 202	General Physics	4
PHIL 213	Ethics and Health Care	3
PHYS 208	University Physics II	5
PSYC 308	Stress and its Management	3



PSYC 309	Personality	3
PSYC 401	Physiological Psychology	3
PSYC 407	Psychology of the Abnormal	3
PSYC 412	Health Psychology	3
SOCY 445	Medical Sociology	3
UNIV 101	Introduction to the University	1
Other adviser-approved courses		

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
BIOL 101	Biological Concepts	4
& BIOZ 101	and Biological Concepts Laboratory	
HPEX 310	Fitness and Health	3
UNIV 111	Focused Inquiry I	3
Approved H&S literature and civilization		3
Term Hours:		13

#### Spring semester

HUMS 202	Choices in a Consumer Society	1
MATH 151	Precalculus Mathematics	4
PSYC 101	Introduction to Psychology	4
UNIV 112	Focused Inquiry II	3
Approved H&S diverse and global communities		3
Term Hours:		15

#### Sophomore year

Fall semester		
HPEX 300	Health Care Delivery in the U.S.	3
PHIS 206	Human Physiology	4
& PHIZ 206	and Human Physiology Laboratory	
UNIV 200	Inquiry and the Craft of Argument	3
HPEX elective		3
Foreign language (101 level)		4
Term Hours:		17

#### Spring semester

CHEM 101	General Chemistry	4
& CHEZ 101	and General Chemistry Laboratory I	
HPEX 375	Physiology of Exercise	4
& HPEZ 375	and Physiology of Exercise Laboratory	
HPEX elective		3
Experiential fine arts		1-3
H&S general education elective		3-4
Term Hours:		15-18

#### Junior year

Fall semester		
HPEX 395	Clinical Experience I	3
HPEX 440	Chronic Disease and Exercise Management	3
PHYS 201	General Physics	4
Foreign language (102 level)		4
Term Hours:		14

#### Spring semester

BIOL 205	Basic Human Anatomy	4
----------	---------------------	---

HPEX 380	Resistance Training for Health and Performance	3
HPEX 441	Assessment and Exercise Intervention in Health and Disease	3
PSYC 304	Life Span Developmental Psychology	3
H&S general education elective		3-4
Term Hours:		16-17

#### Senior year

##### Fall semester

HPEX 350	Nutrition	3
HPEX 371	Psychology of Physical Activity	3
HPEX 470	Exercise Programming and Leadership	3
STAT 210	Basic Practice of Statistics	3
Term Hours:		12

##### Spring semester

HPEX 374	Musculoskeletal Structure and Movement	4
HPEX 475	Cardiovascular Pathophysiology and Pharmacology	3
HPEX 480	Professional Certification Seminar	1
HPEX 495	Clinical Experience II	6
Term Hours:		14
Total Hours:		116-120

### Total minimum requirement 120 credits

## Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in health science

The health science concentration is designed for students who wish to enter a health care-related field (that does not require licensure, certification or registry status) such as corporate wellness, human services, nonprofit health promotion and medical and pharmaceutical sales. Graduates holding a degree with a concentration in health science can also be qualified to enter either graduate or professional health science programs, such as public health, health education and promotion, physical therapy, occupational therapy, pharmacy, nursing, speech-language pathology, audiology, radiation safety, clinical laboratory science and health care administration.

## Learning outcomes

- Graduates will be prepared to demonstrate the ability to use a variety of resources to assess individual community health topics.
- Graduates will be able to demonstrate the ability to use interdisciplinary sciences to construct knowledge for the application of skills designed to solve complex health science issues and problems.
- Graduates will be able to demonstrate the ability to implement health promotion programs in a clinical and public health setting.

## Special requirements

A minimum grade of C is required in all HPEX core, health science core, clinical experiences and elective courses. Students cannot use more than one HPEX course (three credits) from the exercise science core as an elective.

## Degree requirements for Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in health science

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Select from:

BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory (fulfills approved science and technology and University Core natural/physical science)	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 205	Basic Human Anatomy	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
MATH 151 or MATH 200	Precalculus Mathematics (fulfills University Core quantitative literacy) or Calculus with Analytic Geometry	4

PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PHYS 201	General Physics	4
PSYC 101	Introduction to Psychology (fulfills approved human, social and political behavior)	4
PSYC 304	Life Span Developmental Psychology	3
STAT 210	Basic Practice of Statistics	3
Total Hours		22

### HPEX core

HPEX 300	Health Care Delivery in the U.S.	3
HPEX 310	Fitness and Health	3
HPEX 395	Clinical Experience I	3
HPEX 495	Clinical Experience II (fulfills senior capstone)	6
Total Hours		15

### Health science core

HPEX 250	Medical Terminology	1
HPEX 345	Nutrition for Health and Disease	3
HPEX 352	Substance Abuse	3
HPEX 353	Disease Trends, Prevention and Control	3
HPEX 354	Coping and Adaptation	3
HPEX 357	Personal Health and Behavior Change	3
HPEX 358	Introduction to Epidemiology	3
HPEX 435	Health Disparities in the U.S.	3
HPEX 445	Principles of Health Care Management	3
Total Hours		25

### Electives

Select additional courses from the list below	12-16
Total Hours	12-16

### Total minimum requirement 120 credits

#### Electives

ANTH 301	Human Evolution	3
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 201	Human Biology	3
BIOL 209	Medical Microbiology	3
BIOL 217	Principles of Nutrition	3
BIOL 300	Cellular and Molecular Biology	3
BIOL 308	Vertebrate Histology	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5

CHEM 403	Biochemistry I	3
HPEX 271	Safety, First Aid and CPR	3
HPEX 300-level and 400-level courses		
HUMS 391	Special Topics in the Humanities and Sciences (health careers mentoring)	1-4
PHIL 201	Critical Thinking About Moral Problems	3
PHIL 213	Ethics and Health Care	3
PHYS 202	General Physics	4
PHYS 208	University Physics II	5
PSYC 308	Stress and its Management	3
PSYC 309	Personality	3
PSYC 401	Physiological Psychology	3
PSYC 407	Psychology of the Abnormal	3
PSYC 412	Health Psychology	3
SOCY 445	Medical Sociology	3
UNIV 101	Introduction to the University	1
Other adviser-approved courses		

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
BIOL 101	Biological Concepts	4
& BIOZ 101	and Biological Concepts Laboratory	
HPEX 310	Fitness and Health	3
UNIV 111	Focused Inquiry I	3
Approved H&S literature and civilization		3
Term Hours:		13

#### Spring semester

HUMS 202	Choices in a Consumer Society	1
MATH 151	Precalculus Mathematics	4
PSYC 101	Introduction to Psychology	4
UNIV 112	Focused Inquiry II	3
Approved H&S diverse and global communities		3
Term Hours:		15

#### Sophomore year

Fall semester		
HPEX 300	Health Care Delivery in the U.S.	3
HPEX 357	Personal Health and Behavior Change	3
PHIS 206	Human Physiology	4
& PHIZ 206	and Human Physiology Laboratory	
UNIV 200	Inquiry and the Craft of Argument	3
Foreign language (101 level)		4
Term Hours:		17

#### Spring semester

CHEM 101	General Chemistry	4
& CHEZ 101	and General Chemistry Laboratory I	
HPEX 250	Medical Terminology	1
HPEX elective		3
Foreign language (102 level)		4
H&S general education elective		3
Term Hours:		15

#### Junior year

##### Fall semester

HPEX 395	Clinical Experience I	3
PHIL 201	Critical Thinking About Moral Problems	3
PHYS 201	General Physics	4
HPEX elective		3
Experiential fine arts		1-3
Term Hours:		14-16

##### Spring semester

BIOL 205	Basic Human Anatomy	4
HPEX 445	Principles of Health Care Management	3
PSYC 304	Life Span Developmental Psychology	3
HPEX elective		3
H&S general education elective		3-4
Term Hours:		16-17

#### Senior year

##### Fall semester

HPEX 345	Nutrition for Health and Disease	3
HPEX 352	Substance Abuse	3
HPEX 353	Disease Trends, Prevention and Control	3
STAT 210	Basic Practice of Statistics	3
HPEX elective		3
Term Hours:		15

##### Spring semester

HPEX 358	Introduction to Epidemiology	3
HPEX 435	Health Disparities in the U.S.	3
HPEX 495	Clinical Experience II	6
HPEX elective		3
Term Hours:		15
Total Hours:		120-123

## Health Sciences, Certificate in (Post-baccalaureate undergraduate certificate)

The post-baccalaureate undergraduate Certificate in Health Sciences is designed for students who hold a baccalaureate degree in a non-science area and wish to pursue their undergraduate pre-health sciences requirements at VCU. The program is intended for students who have few or none of the prerequisites they need to enter doctoral-level programs in physical therapy, pharmacy, dentistry, medicine, osteopathic medicine, optometry or veterinary sciences. This program challenges students to complete more intensive science and math course work than the basic prerequisites and maintain at least a 3.0 cumulative GPA. The certificate program assists students in becoming more competitive for admission into graduate-level programs in the health sciences, but it does not guarantee admission into any program.

Those students completing the certificate are expected to achieve competency in introductory and more advanced-level science courses and will be granted opportunities to gain health care experience. Students can learn about health care program admissions requirements and strengthen their credentials through advising, student-run club activities and seminars.

Depending on the types of courses students complete before entering the program, the certificate can take one to three years to complete

with either full- or part-time study. Students are advised on how to progress based on prior math and science course work, work and family constraints, and other factors that could affect the time frame to completion. The certificate program requires the completion of minimal competencies and a core curriculum.

Before beginning the core curriculum, students must show minimum competency by completing or transferring in equivalent courses with minimum grades of B for the following:

MATH 151	Precalculus Mathematics	4
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4

Students must have completed all chemistry courses within five years of the time they begin the program in order to apply them toward the minimum competency requirement.

The academic requirements to complete the core portion of the program are as follows: a minimum of 25 credit hours (comprising at least six courses) in mathematics, statistics, chemistry, biology or physics. All program core courses must be at the 200 level or above. At least three of the courses in the core must have a laboratory.

A maximum of 11 credit hours can be transferred toward the core curriculum of the certificate program. Students must have earned a minimum grade of B in all course work accepted for transfer, which must come from an accredited institution. Students should consult with the pre-health sciences advisers to determine the most appropriate courses to meet their educational and career goals.

Courses will be selected from the following lists:

#### Math and statistics

MATH 200	Calculus with Analytic Geometry	4
STAT 210	Basic Practice of Statistics	3
STAT 314	Applications of Statistics	4

#### Biology

BIOL 205	Basic Human Anatomy	4
BIOL 209 or BIOL 303	Medical Microbiology Microbiology	3
BIOL 300	Cellular and Molecular Biology	3
BIOL 302		5
BIOL 308	Vertebrate Histology	4
BIOL 310 & BIOZ 310	Genetics and Laboratory in Genetics	5
BIOL 402	Comparative Vertebrate Anatomy	5
BIOL/FRSC 438	Forensic Molecular Biology	3
BIOL 445	Neurobiology and Behavior	4
BIOL 455	Immunology	3
BIOL 524	Endocrinology	3

BIOL 530/HGEN 501	Human Genetics	3
BIOL 540	Fundamentals of Molecular Genetics	3
PHIS 206 or BIOL 411	Human Physiology Animal Physiology	3

#### Chemistry

CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 303 & CHEZ 303	Physical Chemistry and Physical Chemistry Laboratory I	5
CHEM 304 & CHEZ 304	Physical Chemistry and Physical Chemistry Laboratory II	5
CHEM 305	Physical Chemistry for the Life Sciences	3
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	4
CHEM/MEDC 310	Medicinal Chemistry and Drug Design	3
CHEM 320	Inorganic Chemistry I	3
CHEM 403	Biochemistry I	3
CHEM 404	Biochemistry II	3

#### Physics

PHYS 201	General Physics (includes laboratory)	4
PHYS 202	General Physics (includes laboratory)	4
PHYS 207	University Physics I (includes laboratory)	5
PHYS 208	University Physics II (includes laboratory)	5

While matriculating all students must maintain a minimum cumulative GPA of 3.0. Courses may not be repeated after gaining admission into the certificate program. Failure to maintain the minimum GPA will result in formal dismissal from the certificate program.

Students accepted into the program must also commit to at least 50 hours of volunteer service in the VCU Medical Center Volunteer Program or a private health care setting. Volunteer hours must be documented and submitted to the Office of Pre-professional Health Advising at the time application is submitted for graduation.

Admission to the post-baccalaureate health sciences certificate program is based on students' academic achievement in their baccalaureate programs and whether the certificate program will help them achieve their professional goals. The program accepts students to start in the fall and spring semesters. Application deadlines are the same for transfer students applying to the university. The program is not offered to students pursuing entry into undergraduate- or master's-level health professions programs, nor is it open to those pursuing pre-health course work as part of their undergraduate concentrations at VCU.

## Department of Mathematics and Applied Mathematics

**Glenn Hurlbert, Ph.D.**  
Professor and chair

[math.vcu.edu](http://math.vcu.edu) (<http://www.math.vcu.edu>)

The Department of Mathematics and Applied Mathematics offers an undergraduate program leading to a Bachelor of Science in Mathematical Sciences with concentrations in applied mathematics, biomathematics, mathematics and secondary mathematics teacher preparation. The department administers the Master of Science in Mathematical Sciences concentrations in applied mathematics or mathematics and is involved in administering the Doctor of Philosophy in Systems Modeling and Analysis. The curricula of these programs are run jointly with additional concentrations offered by the Department of Statistical Sciences and Operations Research.

- Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in:
  - Applied mathematics (p. 122)
  - Biomathematics (p. 124)
  - General mathematical sciences (p. 126)
  - Mathematics (p. 129)
  - Secondary teacher preparation (p. 131)
- Mathematics, minor in (p. 133)

## Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in applied mathematics

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses and relationships to other disciplines. To this end, the scholarly growth of the faculty and students in the mathematical sciences is nurtured through study, research and a high standard of teaching. The curriculum provides a sound foundation for the student seeking to enter a career with a technological orientation or for the student who wishes to pursue graduate study in applied mathematics, biomathematics, mathematics, operations research, statistics, teaching mathematics in secondary schools or related fields.

A Bachelor of Science is offered jointly by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research. In the Department of Mathematics and Applied Mathematics, students pursuing the Bachelor of Science in Mathematical Sciences can choose a concentration of applied mathematics, which focuses on the analytical and computational techniques necessary to solve many of today's problems. These methods traditionally had been applied in such areas as chemistry and physics, but now are applied in many other areas.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Pursue goals and careers in education and industry
- Think creatively
- Analyze and write mathematical arguments
- Read and interpret literature
- Use technology in problem-solving and experimentation

## Special requirements

The B.S. in Mathematical Sciences requires a minimum of 120 credits. Along with the general education requirements of the College of Humanities and Sciences and the undergraduate degree requirements, students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151. No more than one course in mathematics (MATH) at the 100 level can count for the general requirements toward the degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

## Double major

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. To initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

## Second baccalaureate degree

For students possessing a bachelor's degree and wishing to gain undergraduate preparation in an area of mathematical sciences, second baccalaureate degrees are offered through the department. For detailed information about these programs, refer to the "Academic regulations and general degree requirement" section of this bulletin.

## Degree requirements for Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in applied mathematics

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8



Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
<b>Total Hours</b>	<b>11-23</b>

<sup>1</sup> Course offered by the School of the Arts

## Collateral requirements

Select one of the following sequences: 8-10

Sequence 1	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II
Sequence 2	
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II
Sequence 3	
PHYS 201 & PHYS 202	General Physics and General Physics
Sequence 4	
PHYS 207 & PHYS 208	University Physics I and University Physics II
Select another course in the natural sciences that is not from the general education science and technology list. This course must be in a science different from the sequence chosen above.	3-5
<b>Total Hours</b>	<b>11-15</b>

## Major requirements (minimum 48 credits; or minimum 42 credits with minor or double major)

MATH 200 & MATH 201	Calculus with Analytic Geometry and Calculus with Analytic Geometry <sup>1</sup>	8
MATH 255	Introduction to Computational Mathematics	3
or CMSC 245 or EGRE 245	Introduction to Programming Using C++ Engineering Programming Using C	
MATH 300	Introduction to Mathematical Reasoning <sup>1</sup>	3
MATH 301	Differential Equations <sup>1</sup>	3
MATH 307	Multivariate Calculus <sup>1</sup>	4
MATH 310	Linear Algebra <sup>1</sup>	3
MATH 407	Advanced Calculus	3
MATH 415	Numerical Methods	3
MATH 490	Mathematical Expositions (capstone)	3
Select two of the following:		6
MATH 432	Ordinary Differential Equations	
MATH 433	Partial Differential Equations	
MATH 434	Discrete Dynamical Systems	
STAT 212	Concepts of Statistics (fulfills University Core quantitative literacy)	3

Applied mathematics concentration electives <sup>2</sup>	3-9
<b>Total Hours</b>	<b>42-48</b>

<sup>1</sup> A minimum grade of C is required in these courses/credits.

<sup>2</sup> Nine additional upper-level credits in the mathematical sciences (MATH, STAT, OPER, CMSC) or three upper-level credits in the mathematical sciences and the completion of a minor or a double major

## Open electives

Select 11-35 open elective credits 11-35

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
MATH 200	Calculus with Analytic Geometry	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved H&S diverse and global communities		3
Approved H&S General Education elective		3-4
Term Hours:		14-15

### Spring semester

HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry	4
STAT 212	Concepts of Statistics	3
UNIV 112	Focused Inquiry II	3
Approved H&S human, social and political behavior		3-4
Term Hours:		14-15

### Sophomore year

#### Fall semester

MATH 255	Introduction to Computational Mathematics	3
MATH 300	Introduction to Mathematical Reasoning	3
MATH 307	Multivariate Calculus	4
UNIV 200	Inquiry and the Craft of Argument	3
Foreign language 101		4
Term Hours:		17

#### Spring semester

MATH 301	Differential Equations	3
MATH 310	Linear Algebra	3
Approved H&S literature and civilization		3
Approved H&S science and technology		3-4
Foreign language 102		4
Term Hours:		16-17

### Junior year

#### Fall semester

MATH 407	Advanced Calculus	3
Applied mathematics concentration elective (upper level)		3
Approved H&S General Education elective		3-4
Experiential fine arts		1-3

Natural sciences sequence (Select one of the following.)			4-5
BIOL 151	Introduction to Biological Sciences I		-
& BIOZ 151	and Introduction to Biological Science Laboratory I		
CHEM 101	General Chemistry		-
& CHEZ 101	and General Chemistry Laboratory I		
PHYS 201	General Physics		-
PHYS 207	University Physics I		-
Term Hours:			14-18

**Spring semester**

MATH 415	Numerical Methods		3
Applied mathematics concentration elective (upper-level)			3
Natural sciences sequence (Select one of the following with appropriate matching course.)			4-5
BIOL 152	Introduction to Biological Sciences II		-
& BIOZ 152	and Introduction to Biological Science Laboratory II		
CHEM 102	General Chemistry		-
& CHEZ 102	and General Chemistry Laboratory II		
PHYS 202	General Physics		-
PHYS 208	University Physics II		-
Open electives			6
Term Hours:			16-17

**Senior year****Fall semester**

MATH 432	Ordinary Differential Equations		3
or MATH 433	or Partial Differential Equations		
or MATH 434	or Discrete Dynamical Systems		
Applied mathematics concentration elective (upper-level)			3
Natural sciences elective <sup>1</sup>			3-5
Open electives			5-6
Term Hours:			14-17

**Spring semester**

MATH 432	Ordinary Differential Equations		3
or MATH 433	or Partial Differential Equations		
or MATH 434	or Discrete Dynamical Systems		
MATH 490	Mathematical Expositions		3
Open electives			9
Term Hours:			15
Total Hours:			120-131

<sup>1</sup> Not from general education science and technology list and different science than chosen for sequence.

## Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in biomathematics

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses and relationships to other disciplines. To this end, the scholarly growth of the faculty

and students in the mathematical sciences is nurtured through study, research and a high standard of teaching. The curriculum provides a sound foundation for the student seeking to enter a career with a technological orientation or for the student who wishes to pursue graduate study in applied mathematics, biomathematics, mathematics, operations research, statistics, teaching mathematics in secondary schools or related fields.

A Bachelor of Science is offered jointly by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research. In the Department of Mathematics and Applied Mathematics, students pursuing the Bachelor of Science in Mathematical Sciences can choose a concentration of biomathematics, which focuses on the overlap between mathematics and the disciplines of biology and medicine. This concentration covers the mathematical methods of modeling and analysis of phenomena in the life sciences.

### Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Pursue goals and careers in education and industry
- Think creatively
- Analyze and write mathematical arguments
- Read and interpret literature
- Use technology in problem-solving and experimentation

### Special requirements

The B.S. in Mathematical Sciences requires a minimum of 120 credits. Along with the general education requirements of the College of Humanities and Sciences and the undergraduate degree requirements, students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151. No more than one course in mathematics (MATH) at the 100 level can count for the general requirements toward the degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

### Double major

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. To initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

### Second baccalaureate degree

For students possessing a bachelor's degree and wishing to gain undergraduate preparation in an area of mathematical sciences, second baccalaureate degrees are offered through the department. For detailed information about these programs, refer to the "Academic regulations and general degree requirement" section of this bulletin.

## Degree requirements for Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in biomathematics

### General Education requirements

University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Select one of the following sequences: 8-10

Sequence 1		
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
Sequence 2		
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	
Sequence 3		
PHYS 201 & PHYS 202	General Physics and General Physics	
Sequence 4		
PHYS 207 & PHYS 208	University Physics I and University Physics II	

Select another course in the natural sciences that is not from the general education science and technology list. This course must be in a science different from the sequence chosen above. 3-5

Total Hours 11-15

### Major requirements (minimum 48 credits; or minimum 45 credits with minor or double major)

MATH 200 & MATH 201	Calculus with Analytic Geometry and Calculus with Analytic Geometry <sup>1</sup>	8
MATH 255	Introduction to Computational Mathematics	3
or CMSC 245 or EGRE 245	Introduction to Programming Using C++ Engineering Programming Using C	
MATH 300	Introduction to Mathematical Reasoning <sup>1</sup>	3
MATH 301	Differential Equations <sup>1</sup>	3
MATH 307	Multivariate Calculus <sup>1</sup>	4
MATH 310	Linear Algebra <sup>1</sup>	3
MATH 380	Introduction to Mathematical Biology	4
MATH 407	Advanced Calculus	3
MATH 490	Mathematical Expositions (capstone)	3
Select two of the following:		6
MATH 480	Methods of Applied Mathematics for the Life Sciences: Discrete	
Repeat the following courses for two credits:		2
MATH 481	Methods of Applied Mathematics for the Life Sciences: ODE	
MATH 482	Methods of Applied Mathematics for the Life Sciences: PDE	
MATH 585	Biomathematics Seminar: _____	
STAT 212	Concepts of Statistics (fulfills University Core quantitative literacy)	3
Biomathematics concentration electives <sup>2</sup>		0-6
Total Hours		42-48

<sup>1</sup> A minimum grade of C is required in these courses/credits.

<sup>2</sup> Six additional upper-level credits in the mathematical sciences (MATH, STAT, OPER, CMSC) or the completion of a minor or a double major

### Open electives

Select 11-32 open elective credits 11-32

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester	Hours
MATH 200 Calculus with Analytic Geometry	4
UNIV 101 Introduction to the University	1
UNIV 111 Focused Inquiry I	3
Approved H&S diverse and global communities	3

Approved H&S General Education elective	3-4
Term Hours:	14-15
<b>Spring semester</b>	
HUMS 202 Choices in a Consumer Society	1
MATH 201 Calculus with Analytic Geometry	4
STAT 212 Concepts of Statistics	3
UNIV 112 Focused Inquiry II	3
Approved H&S human, social and political behavior	3-4
Term Hours:	14-15
<b>Sophomore year</b>	
<b>Fall semester</b>	
MATH 255 Introduction to Computational Mathematics	3
MATH 300 Introduction to Mathematical Reasoning	3
MATH 307 Multivariate Calculus	4
UNIV 200 Inquiry and the Craft of Argument	3
Foreign language 101	4
Term Hours:	17
<b>Spring semester</b>	
MATH 301 Differential Equations	3
MATH 310 Linear Algebra	3
Approved H&S literature and civilization	3
Approved H&S science and technology	3-4
Foreign language 102	4
Term Hours:	16-17
<b>Junior year</b>	
<b>Fall semester</b>	
MATH 380 Introduction to Mathematical Biology	4
Approved H&S General Education elective	3-4
Experiential fine arts	1-3
Natural science sequence (Select one of the following.)	4-5
BIOL 151 Introduction to Biological Sciences I & BIOZ 151 and Introduction to Biological Science Laboratory I	-
CHEM 101 General Chemistry & CHEZ 101 and General Chemistry Laboratory I	-
PHYS 201 General Physics	-
PHYS 207 University Physics I	-
Term Hours:	12-16
<b>Spring semester</b>	
MATH 480 Methods of Applied Mathematics for the or MATH Life Sciences: Discrete 481 or Methods of Applied Mathematics for or MATH the Life Sciences: ODE 482 or Methods of Applied Mathematics for the Life Sciences: PDE	3
Biomathematics concentration elective (upper-level)	3
Natural science sequence (Select one of the following with appropriate matching course.)	4-5
BIOL 152 Introduction to Biological Sciences II & BIOZ 152 and Introduction to Biological Science Laboratory II	-
CHEM 102 General Chemistry & CHEZ 102 and General Chemistry Laboratory II	-

PHYS 202 General Physics	-
PHYS 208 University Physics II	-
Open electives	6
Term Hours:	16-17
<b>Senior year</b>	
<b>Fall semester</b>	
MATH 407 Advanced Calculus	3
MATH 480 Methods of Applied Mathematics for the or MATH Life Sciences: Discrete 481 or Methods of Applied Mathematics for or MATH the Life Sciences: ODE 482 or Methods of Applied Mathematics for the Life Sciences: PDE	3
MATH 585 Biomathematics Seminar:_____	1
Natural sciences elective <sup>1</sup>	3-5
Open electives	6
Term Hours:	16-18
<b>Spring semester</b>	
MATH 490 Mathematical Expositions	3
MATH 585 Biomathematics Seminar:_____	1
Biomathematics concentration elective (upper-level)	3
Open electives	8
Term Hours:	15
Total Hours:	120-130

<sup>1</sup> Not from general education science and technology list and different science than chosen for sequence.

## Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in general mathematical sciences

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses and relationships to other disciplines. To this end, the scholarly growth of the faculty and students in the mathematical sciences is nurtured through study, research and a high standard of teaching. The curriculum provides a sound foundation for the student seeking to enter a career with a technological orientation or for the student who wishes to pursue graduate study in applied mathematics, biomathematics, mathematics, operations research, statistics, teaching mathematics in secondary schools or related fields.

A Bachelor of Science is offered jointly by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Pursue goals and careers in education and industry
- Think creatively
- Analyze and write mathematical arguments
- Read and interpret literature

- Use technology in problem-solving and experimentation

## Special requirements

The B.S. in Mathematical Sciences requires a minimum of 120 credits. Along with the general education requirements of the College of Humanities and Sciences and the undergraduate degree requirements, students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151. No more than one course in mathematics (MATH) at the 100 level can count for the general requirements toward the degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

## Double major

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. To initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

## Second baccalaureate degree

For students possessing a bachelor's degree and wishing to gain undergraduate preparation in an area of mathematical sciences, second baccalaureate degrees are offered through the department. For detailed information about these programs, refer to the "Academic regulations and general degree requirement" section of this bulletin.

## Degree requirements for Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in general mathematical sciences

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		

Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
Total Hours	11-23

<sup>1</sup> Course offered by the School of the Arts

## Collateral requirements

Select one of the following sequences: 8-10

Sequence 1	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II
Sequence 2	
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II
Sequence 3	
PHYS 201 & PHYS 202	General Physics and General Physics
Sequence 4	
PHYS 207 & PHYS 208	University Physics I and University Physics II
Select another course in the natural sciences that is not from the general education science and technology list. This course must be in a science different from the sequence chosen above.	3-5
Total Hours	11-15

## Major requirements (minimum 48 credits; or minimum 42 credits with minor or double major)

MATH 200 & MATH 201	Calculus with Analytic Geometry and Calculus with Analytic Geometry <sup>1</sup>	8
MATH 300	Introduction to Mathematical Reasoning <sup>1</sup>	3
MATH 307	Multivariate Calculus <sup>1</sup>	4
MATH 310	Linear Algebra <sup>1</sup>	3
STAT 212	Concepts of Statistics (fulfills University Core quantitative literacy)	3

Select one of the following course groups: 12-13

Group 1:

MATH 407	Advanced Calculus
MATH 490	Mathematical Expositions (capstone)
Select one of the following:	
MATH 255	Introduction to Computational Mathematics
CMSC 245	Introduction to Programming Using C++
EGRE 245	Engineering Programming Using C
Select one of the following:	
MATH 301	Differential Equations <sup>1</sup>



MATH/OPER 327	
Group 2:	
SSOR 490	Developing Professional Skills in Operations Research and Statistics (capstone)
STAT/MATH 309	Introduction to Probability Theory
STAT 403	Introduction to Stochastic Processes
Select one of the following:	
STAT 321	Introduction to Statistical Computing
MATH 255	Introduction to Computational Mathematics
CMSC 245	Introduction to Programming Using C++
EGRE 245	Engineering Programming Using C
Select one of the following options:	
Additional upper-division credits in MATH, STAT or OPER, with at least nine credits from course offerings at 400 to 500 level	
Additional upper-division credits in MATH, STAT or OPER, with at least six credits from course offerings at 400 to 500 level and complete a minor or double major	
Total Hours	42-49

<sup>1</sup> A minimum grade of C is required in these courses/credits.

## Open electives

Select 11-35 open elective credits 11-35

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
MATH 200	Calculus with Analytic Geometry	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved H&S diverse and global communities		3
Approved H&S General Education elective		3-4
Term Hours:		14-15

### Spring semester

HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry	4
STAT 212	Concepts of Statistics	3
UNIV 112	Focused Inquiry II	3
Approved H&S human, social and political behavior		3-4
Term Hours:		14-15

### Sophomore year

Fall semester		Hours
MATH 300	Introduction to Mathematical Reasoning	3
MATH 307	Multivariate Calculus	4
UNIV 200	Inquiry and the Craft of Argument	3
Foreign language 101		4
Select one of the following:		3

MATH 255	Introduction to Computational Mathematics (group 1)	3
STAT 321	Introduction to Statistical Computing (group 2)	3
Term Hours:		17

### Spring semester

MATH 310	Linear Algebra	3
Select one of the following:		3
MATH 301	Differential Equations	-
MATH 327 or OPER 327		-
MATH 309 or STAT 309		-
Approved H&S literature and civilization		3
Approved H&S science and technology		3-4
Foreign language 102		4
Term Hours:		16-17

### Junior year

Fall semester		Hours
Select one of the following:		3
MATH 407	Advanced Calculus (group 1)	-
STAT 403	Introduction to Stochastic Processes	-
Approved H&S General Education elective		3-4
Experiential fine arts		1-3
Natural sciences sequence (Select one of the following.)		4-5
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	-
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	-
PHYS 201	General Physics	-
PHYS 207	University Physics I	-
Open elective		3
Term Hours:		14-18

### Spring semester

Mathematical sciences electives (upper-level)		6
Natural sciences sequence (Select one of the following with appropriate matching course.)		4-5
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	-
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	-
PHYS 202	General Physics	-
PHYS 208	University Physics II	-
Open electives		5
Term Hours:		15-16

### Senior year

Fall semester		Hours
Mathematical sciences electives (400-500 level)		6
Natural sciences elective <sup>1</sup>		3-5

Open electives	6
Term Hours:	15-17
<b>Spring semester</b>	
Select one of the following:	3
MATH 490 Mathematical Expositions (group 1)	-
SSOR 490 Developing Professional Skills in Operations Research and Statistics (group 2)	-
Mathematical sciences elective (upper-level) or elective to complete minor or double major	3
Mathematical sciences elective (400-500 level) or elective to complete minor or double major	3
Open electives	6
Term Hours:	15
Total Hours:	120-130

<sup>1</sup> Not from general education science and technology list and different science than chosen for sequence.

## Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in mathematics

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses and relationships to other disciplines. To this end, the scholarly growth of the faculty and students in the mathematical sciences is nurtured through study, research and a high standard of teaching. The curriculum provides a sound foundation for the student seeking to enter a career with a technological orientation or for the student who wishes to pursue graduate study in applied mathematics, biomathematics, mathematics, operations research, statistics, teaching mathematics in secondary schools or related fields.

A Bachelor of Science is offered jointly by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research. In the Department of Mathematics and Applied Mathematics, students pursuing the Bachelor of Science in Mathematical Sciences can choose a concentration of mathematics, which fosters the understanding of the power and the beauty of pure mathematics and its applications to various branches of knowledge.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Pursue goals and careers in education and industry
- Think creatively
- Analyze and write mathematical arguments
- Read and interpret literature
- Use technology in problem-solving and experimentation

## Special requirements

The B.S. in Mathematical Sciences requires a minimum of 120 credits. Along with the general education requirements of the College of Humanities and Sciences and the undergraduate degree requirements,

students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151. No more than one course in mathematics (MATH) at the 100 level can count for the general requirements toward the degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

## Double major

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. To initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

## Second baccalaureate degree

For students possessing a bachelor's degree and wishing to gain undergraduate preparation in an area of mathematical sciences, second baccalaureate degrees are offered through the department. For detailed information about these programs, refer to the "Academic regulations and general degree requirement" section of this bulletin.

## Degree requirements for Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in mathematics

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts**Collateral requirements**

Select one of the following sequences: 8-10

Sequence 1		
BIOL 151	Introduction to Biological Sciences I	
& BIOZ 151	and Introduction to Biological Science Laboratory I	
BIOL 152	Introduction to Biological Sciences II	
& BIOZ 152	and Introduction to Biological Science Laboratory II	
Sequence 2		
CHEM 101	General Chemistry	
& CHEZ 101	and General Chemistry Laboratory I	
CHEM 102	General Chemistry	
& CHEZ 102	and General Chemistry Laboratory II	
Sequence 3		
PHYS 201	General Physics	
& PHYS 202	and General Physics	
Sequence 4		
PHYS 207	University Physics I	
& PHYS 208	and University Physics II	
Select another course in the natural sciences that is not from the general education science and technology list. This course must be in a science different from the sequence chosen above.		3-5

Total Hours 11-15

**Major requirements (minimum 48 credits; or minimum 42 credits with minor or double major)**

MATH 200	Calculus with Analytic Geometry	8
& MATH 201	and Calculus with Analytic Geometry <sup>1</sup>	
MATH 255	Introduction to Computational Mathematics	3
or CMSC 245	Introduction to Programming Using C++	
or EGRE 245	Engineering Programming Using C	
MATH 300	Introduction to Mathematical Reasoning <sup>1</sup>	3
MATH 301	Differential Equations <sup>1</sup>	3
MATH 307	Multivariate Calculus <sup>1</sup>	4
MATH 310	Linear Algebra <sup>1</sup>	3
MATH 350	Introductory Combinatorics	3
or MATH 356	Graphs and Algorithms	
MATH 401	Introduction to Abstract Algebra	3
MATH 407	Advanced Calculus	3
MATH 409	General Topology	3
MATH 427	Excursions in Analysis: Real	3
or MATH 428	Excursions in Analysis: Complex	
or MATH 429	Excursions in Analysis: Applied	
MATH 490	Mathematical Expositions (capstone)	3
STAT 212	Concepts of Statistics (fulfills University Core quantitative literacy)	3

Mathematics concentration electives <sup>2</sup>	0-6
Total Hours	42-48

<sup>1</sup> A minimum grade of C is required in these courses/credits.<sup>2</sup> Six additional upper-level credits in the mathematical sciences (MATH, STAT, OPER, CMSC) or the completion of a minor or a double major**Open electives**

Select 11-35 open elective credits 11-35

**Total minimum requirement 120 credits**

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Freshman year**

Fall semester		Hours
MATH 200	Calculus with Analytic Geometry	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved H&S diverse and global communities		3
Approved H&S General Education elective		3-4
Term Hours:		14-15

**Spring semester**

HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry	4
STAT 212	Concepts of Statistics	3
UNIV 112	Focused Inquiry II	3
Approved H&S human, social and political behavior		3-4
Term Hours:		14-15

**Sophomore year****Fall semester**

MATH 255	Introduction to Computational Mathematics	3
MATH 300	Introduction to Mathematical Reasoning	3
MATH 307	Multivariate Calculus	4
UNIV 200	Inquiry and the Craft of Argument	3
Foreign language 101		4
Term Hours:		17

**Spring semester**

MATH 301	Differential Equations	3
MATH 310	Linear Algebra	3
Approved H&S literature and civilization		3
Approved H&S science and technology		3-4
Foreign language 102		4
Term Hours:		16-17

**Junior year****Fall semester**

MATH 407	Advanced Calculus	3
Approved H&S General Education elective		3-4
Experiential fine arts		1-3
Natural sciences sequence (Select one of the following.)		4-5

BIOL 151	Introduction to Biological Sciences I	-
& BIOZ 151	and Introduction to Biological Science Laboratory I	-
CHEM 101	General Chemistry	-
& CHEZ 101	and General Chemistry Laboratory I	-
PHYS 201	General Physics	-
PHYS 207	University Physics I	-
Open elective		3
Term Hours:		14-18

**Spring semester**

MATH 427	Excursions in Analysis: Real	3
or MATH 428	or Excursions in Analysis: Complex	
or MATH 429	or Excursions in Analysis: Applied	

Mathematics concentration elective (upper-level)		3
Natural sciences sequence (Select one of the following with appropriate matching course.)		4-5
BIOL 152	Introduction to Biological Sciences II	-
& BIOZ 152	and Introduction to Biological Science Laboratory II	-
CHEM 102	General Chemistry	-
& CHEZ 102	and General Chemistry Laboratory II	-
PHYS 202	General Physics	-
PHYS 208	University Physics II	-
Open electives		5
Term Hours:		15-16

**Senior year****Fall semester**

MATH 401	Introduction to Abstract Algebra	3
MATH 409	General Topology	3
Natural sciences elective <sup>1</sup>		3-5
Open electives		6
Term Hours:		15-17

**Spring semester**

MATH 350	Introductory Combinatorics	3
or MATH 356	or Graphs and Algorithms	
MATH 490	Mathematical Expositions	3
Mathematics concentration elective (upper-level)		3
Open electives		6
Term Hours:		15

Total Hours: 120-130

<sup>1</sup> Not from general education science and technology list and different science than chosen for sequence.

## Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in secondary teacher preparation

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses and relationships to other disciplines. To this end, the scholarly growth of the faculty and students in the mathematical sciences is nurtured through study,

research and a high standard of teaching. The curriculum provides a sound foundation for the student seeking to enter a career with a technological orientation or for the student who wishes to pursue graduate study in applied mathematics, biomathematics, mathematics, operations research, statistics, teaching mathematics in secondary schools or related fields.

A Bachelor of Science is offered jointly by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research. In the Department of Mathematics and Applied Mathematics, students pursuing the Bachelor of Science in Mathematical Sciences can choose a concentration of secondary teacher preparation, which prepares students for teaching mathematics in secondary schools when completed in conjunction with the Master of Teaching degree offered through the School of Education as part of the Extended Teacher Preparation Program.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Pursue goals and careers in education and industry
- Think creatively
- Analyze and write mathematical arguments
- Read and interpret literature
- Use technology in problem-solving and experimentation

## Special requirements

The B.S. in Mathematical Sciences requires a minimum of 120 credits. Along with the general education requirements of the College of Humanities and Sciences and the undergraduate degree requirements, students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151. No more than one course in mathematics (MATH) at the 100 level can count for the general requirements toward the degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

## Double major

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. To initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

## Second baccalaureate degree

For students possessing a bachelor's degree and wishing to gain undergraduate preparation in an area of mathematical sciences, second baccalaureate degrees are offered through the department. For detailed information about these programs, refer to the "Academic regulations and general degree requirement" section of this bulletin.

## Degree requirements for Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in secondary teacher preparation

### General Education requirements

University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Select one of the following sequences: 8-10

Sequence 1		
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
Sequence 2		
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	
Sequence 3		
PHYS 201 & PHYS 202	General Physics and General Physics	
Sequence 4		
PHYS 207 & PHYS 208	University Physics I and University Physics II	

Select another course in the natural sciences that is not from the general education science and technology list. This course must be in a science different from the sequence chosen above. 3-5

Total Hours 11-15

### Major requirements (minimum 48 credits; or minimum 42 credits with minor or double major)

MATH 200 & MATH 201	Calculus with Analytic Geometry and Calculus with Analytic Geometry <sup>1</sup>	8
MATH 255	Introduction to Computational Mathematics	3
or CMSC 245 or EGRE 245	Introduction to Programming Using C++ Engineering Programming Using C	
MATH 300	Introduction to Mathematical Reasoning <sup>1</sup>	3
MATH 307	Multivariate Calculus <sup>1</sup>	4
MATH 310	Linear Algebra <sup>1</sup>	3
MATH 404	Algebraic Structures and Functions	3
MATH 407	Advanced Calculus	3
MATH 430	The History of Mathematics	3
MATH 454	Using Technology in the Teaching of Mathematics	3
MATH 490	Mathematical Expositions (capstone)	3
MATH 505	Modern Geometry	3
OPER 327	Mathematical Modeling	3
STAT 212	Concepts of Statistics (fulfills University Core quantitative literacy)	3

Secondary teacher preparation concentration electives <sup>2</sup> 0-6

Total Hours 42-48

<sup>1</sup> Note: A minimum grade of C is required in these courses/credits.

<sup>2</sup> Six additional upper-level credits in the mathematical sciences (MATH, STAT, OPER, CMSC) or the completion of a minor or a double major (which could be in education).

### Open electives

Select 11-35 open elective credits 11-35

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
MATH 200	Calculus with Analytic Geometry	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved H&S diverse and global communities		3
Approved H&S General Education elective		3-4
Term Hours:		14-15

#### Spring semester

HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry	4



STAT 212	Concepts of Statistics	3
UNIV 112	Focused Inquiry II	3
Approved H&S human, social and political behavior		3-4
Term Hours:		14-15

**Sophomore year****Fall semester**

MATH 255	Introduction to Computational Mathematics	3
MATH 300	Introduction to Mathematical Reasoning	3
MATH 307	Multivariate Calculus	4
UNIV 200	Inquiry and the Craft of Argument	3
Foreign language 101		4
Term Hours:		17

**Spring semester**

MATH 310	Linear Algebra	3
OPER 327	Mathematical Modeling	3
Approved H&S literature and civilization		3
Approved H&S science and technology		3-4
Foreign language 102		4
Term Hours:		16-17

**Junior year****Fall semester**

MATH 407	Advanced Calculus	3
MATH 430	The History of Mathematics	3
Approved H&S General Education elective		3-4
Experiential fine arts		1-3
Natural sciences sequence (Select one of the following.)		4-5
BIOL 151	Introduction to Biological Sciences I	-
& BIOZ 151	and Introduction to Biological Science Laboratory I	-
CHEM 101	General Chemistry	-
& CHEZ 101	and General Chemistry Laboratory I	-
PHYS 201	General Physics	-
PHYS 207	University Physics I	-
Term Hours:		14-18

**Spring semester**

MATH 404	Algebraic Structures and Functions	3
Natural sciences sequence (Select one of the following with appropriate matching course.)		4-5
BIOL 152	Introduction to Biological Sciences II	-
& BIOZ 152	and Introduction to Biological Science Laboratory II	-
CHEM 102	General Chemistry	-
& CHEZ 102	and General Chemistry Laboratory II	-
PHYS 202	General Physics	-
PHYS 208	University Physics II	-
Open electives		5
Secondary teacher preparation concentration elective (upper-level)		3
Term Hours:		15-16

**Senior year****Fall semester**

MATH 454	Using Technology in the Teaching of Mathematics	3
MATH 505	Modern Geometry	3
Natural sciences elective <sup>1</sup>		3-5
Open electives		6
Term Hours:		15-17

**Spring semester**

MATH 490	Mathematical Expositions	3
Open electives		9
Secondary teacher preparation concentration elective (upper-level)		3
Term Hours:		15
Total Hours:		120-130

<sup>1</sup> Not from general education science and technology list and different science than chosen for sequence.

## Mathematics, minor in

A minor in mathematics consists of at least 18 credits (and a minimum of five courses) offered by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research, including the following:

Select a minimum of three credits of calculus	3
Select a minimum of nine upper-level credits	9
Select six additional credits offered by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research	6
Total Hours	18

None of the following courses may be used to fulfill the required 18 credits:

STAT 208	Statistical Thinking	3
STAT 210	Basic Practice of Statistics	3
STAT 312		3
MATH 303	Investigations in Geometry	3
MATH 361	Numbers and Operations	3
MATH 362	Algebra and Functions	3

Or any 100-level course

Mathematics classes in areas other than MATH, STAT or OPER (e.g. ACCT, MGMT or ENGR) cannot be applied to the minor. A minimum GPA of 2.0 must be achieved in the minor. Students in the mathematical sciences majors cannot minor in mathematics.

## Department of Military Science and Leadership

[has.vcu.edu/mil](http://has.vcu.edu/mil) (<http://www.has.vcu.edu/mil>)

The military science curriculum teaches the principles of management and leadership as a foundation for civilian and military careers. Graduates of this program are eligible for appointments as commissioned officers in the U.S. Army, the U.S. Army Reserve or Army National Guard.

For more information on participating in ROTC or on scholarship opportunities, please contact [rotc@vcu.edu](mailto:rotc@vcu.edu) or call (804) 828-7682.

## Scholarships

Army ROTC offers students several opportunities for scholarships worth more than \$29,000 at VCU. High school students and students on campus may apply for a four-year scholarship. Two-year scholarships also are available to on-campus students. All scholarships cover VCU tuition, most books, laboratory fees and provide between \$300 to \$500 a month during the school year for living expenses.

## The four-year program

The traditional four-year program is divided into two parts.

### Basic course

Normally freshman and sophomore years, which cover military history, traditions, organizations and national defense. The emphasis in the course is on leadership development and general life skills. There is no commitment to the U.S. Army, unless the student is on a ROTC scholarship.

### Advanced course

Departmental approval is required to enter junior- and senior-level classes. They cover instruction and practice in management, tactics, ethics, professionalism and continued leadership development.

All ROTC uniforms and materials are furnished at no cost. Students selected for advanced classes receive \$450 or \$500 a month during the school year.

During the summer between the junior and senior years, students will attend a four-week course, Leadership Development and Assessment Camp. LDAC provides hands-on experience and evaluations for students at Fort Lewis, Wash.

## The two-year program

Students who have not taken any of the basic classes are still eligible for a commission through the two-year program.

In this program, student attend the Leader's Training Course at Fort Knox, Ky., for four weeks during the summer. Upon completion of LTC, students are eligible for the advanced courses in their junior and senior years.

## Simultaneous membership program

This program allows students to become members of the Army National Guard or the Army Reserve while enrolled in Army ROTC.

Advanced ROTC SMP students are paid for their guard/reserve training plus they receive a monthly ROTC allowance of \$400, \$450 or \$500 for up to three years.

## ROTC for veterans

If students are veterans, military experience can fulfill the basic course requirements. Some veterans may enroll directly into advanced courses. In addition to any financial assistance received from ROTC, veterans still are qualified to receive any and all VEAP/GI Bill/Army College Fund benefits to which they are entitled.

## Department of Philosophy

Anthony Ellis

Professor and chair

[philosophy.vcu.edu](http://philosophy.vcu.edu) (<http://philosophy.vcu.edu>)

Philosophy aims at a deeper understanding of matters that should most concern the human race. Philosophical questions crop up in science, religion, art, morality, politics, medicine and in everyday life. Students enrolled in philosophy are encouraged to think seriously about fundamental issues in all these domains and to formulate coherent and well-grounded points of view. Because of its extensive use of critical and analytical reasoning, philosophy equips students for careers in medicine, law, business and other fields that require careful thought and the clear expression of ideas.

The Department of Philosophy offers a Bachelor of Arts in Philosophy. The department offers courses for students in other programs, as well as for those majoring in philosophy or religious studies.

- Philosophy, Bachelor of Arts (B.A.) (p. 134)
- Philosophy, Bachelor of Arts (B.A.) with a concentration in:
  - Ethics and public policy (p. 136)
  - Philosophy and law (p. 138)
  - Philosophy and science (p. 139)
- Philosophy, minor in (p. 141)
- Philosophy of law, minor in (p. 142)

## Philosophy, Bachelor of Arts (B.A.)

The Bachelor of Arts in Philosophy requires a minimum of 120 credits, with at least 30 of those credits in philosophy. Fifteen of these credits must be selected from upper-level philosophy courses.

Majors intending to pursue graduate studies in philosophy are advised to choose the curriculum outlined below.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

1. Demonstrate a good knowledge of and facility with the methods and concepts of modern, analytic philosophy
2. Demonstrate a good knowledge of the current state of academic discussion of some of the central philosophical topics
3. Demonstrate some knowledge of the history of philosophy, including both major themes and movements and some specific figures and systems
4. Demonstrate the ability to think critically and systemically about philosophical problems, both abstract and practical, and to write clearly and cogently about them
5. Demonstrate the ability to construct and analyze arguments clearly and cogently, independently of their subject matter.

Degree requirements for Philosophy, Bachelor of Arts (B.A.)

## General Education requirements

University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

#### Major requirements

PHIL 103	Ancient Greek and Medieval Western Philosophy	3
PHIL 104	Modern Western Philosophy	3
Select one of the following:		3
PHIL 201	Critical Thinking About Moral Problems	
PHIL 211	History of Ethics	
PHIL 212	Ethics and Applications	
PHIL 213	Ethics and Health Care	
PHIL 214	Ethics and Business	
PHIL 222	Logic	3
PHIL 490	Seminar in Philosophy (capstone course)	3
PHIL elective		3
PHIL elective (300-level or higher)		3
Select three of the following with at least one course each from group (a) and group (b):		9
Group (a):		
PHIL 320	Philosophy of Law	
PHIL 327	Ethical Theory	
PHIL 335	Social and Political Philosophy	
Group (b):		
PHIL 301	Mind and Reality	
PHIL 302	Reason and Knowledge	

PHIL 303	Philosophy of Language	
Group (c):		
PHIL 391	Topics in Philosophy	
Total Hours		30

#### Open electives

Select 44-58 open elective credits 44-58

#### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester	Hours
UNIV 101 Introduction to the University	1
UNIV 111 Focused Inquiry I	3
Approved H&S diverse and global communities	3
Approved quantitative literacy	3-4
Open electives	5-6
Term Hours:	15-17

#### Spring semester

HUMS 202 Choices in a Consumer Society	1
UNIV 112 Focused Inquiry II	3
Approved H&S General Education elective	3-4
Approved H&S human, social and political behavior	3-4
Open electives	5-6
Term Hours:	15-18

#### Sophomore year

Fall semester	Hours
PHIL 103 Ancient Greek and Medieval Western Philosophy	3
PHIL 201 Critical Thinking About Moral Problems	3
UNIV 200 Inquiry and the Craft of Argument	3
Foreign language (101-level)	4
Experiential fine arts	1-3
Term Hours:	14-16

#### Spring semester

PHIL 222 Logic	3
Approved H&S General Education elective	3-4
Approved H&S science and technology	3-4
Foreign language (102-level)	4
Open elective	3
Term Hours:	16-18

#### Junior year

Fall semester	Hours
PHIL 104 Modern Western Philosophy	3
PHIL 301 Mind and Reality	3
or PHIL 302 or Reason and Knowledge	
or PHIL 303 or Philosophy of Language	
Open electives	9
Term Hours:	15

**Spring semester**

PHIL 320	Philosophy of Law	3
or PHIL 327	or Ethical Theory	
or PHIL 335	or Social and Political Philosophy	
PHIL electives		3
Open electives		9
Term Hours:		15

**Senior year****Fall semester**

PHIL 301	Mind and Reality	3
or PHIL 302	or Reason and Knowledge	
or PHIL 303	or Philosophy of Language	
or PHIL 320	or Philosophy of Law	
or PHIL 327	or Ethical Theory	
or PHIL 335	or Social and Political Philosophy	
or PHIL 391	or Topics in Philosophy	
PHIL elective (300-level or higher)		3
Open electives		9
Term Hours:		15

**Spring semester**

PHIL 490	Seminar in Philosophy (capstone)	3
Open electives		12
Term Hours:		15
Total Hours:		120-129

## Philosophy, Bachelor of Arts (B.A.) with a concentration in ethics and public policy

The Bachelor of Arts in Philosophy requires a minimum of 120 credits, with at least 30 of those credits in philosophy. Fifteen of these credits must be selected from upper-level philosophy courses.

Students whose main interests in philosophy are ethics, political philosophy, philosophy of law or public policy (and who may wish to pursue graduate work in law, political science, economics and related areas) will probably want to choose the ethics and public policy concentration.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Demonstrate a good knowledge of and facility with the methods and concepts of modern, analytic philosophy
2. Demonstrate a good knowledge of the current state of academic discussion of some of the central philosophical topics
3. Demonstrate some knowledge of the history of philosophy, including both major themes and movements and some specific figures and systems

4. Demonstrate the ability to think critically and systemically about philosophical problems, both abstract and practical, and to write clearly and cogently about them
5. Demonstrate the ability to construct and analyze arguments clearly and cogently, independently of their subject matter.

Degree requirements for Philosophy, Bachelor of Arts with an ethics and public policy concentration

## General Education requirements

### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

## Major requirements

Select one of the following:		3
PHIL 101	Introduction to Philosophy	
PHIL 103	Ancient Greek and Medieval Western Philosophy	
PHIL 104	Modern Western Philosophy	
Select one of the following:		3
PHIL 201	Critical Thinking About Moral Problems	
PHIL 211	History of Ethics	
PHIL 212	Ethics and Applications	
PHIL 213	Ethics and Health Care	
PHIL 214	Ethics and Business	
PHIL 222	Logic	3

Select one of the following:	3
PHIL 301 Mind and Reality	
PHIL 302 Reason and Knowledge	
PHIL 303 Philosophy of Language	
Select two of the following:	6
PHIL 320 Philosophy of Law	
PHIL 327 Ethical Theory	
PHIL 335 Social and Political Philosophy	
PHIL 490 Seminar in Philosophy (capstone course)	3
PHIL elective	3
Non-PHIL course options (from the list below)	6
Total Hours	30

## Open electives

Select 44-58 open elective credits 44-58

## Total minimum requirement 120 credits

### Non-PHIL course options for major requirements (choose two)

CRJS 324 Courts and the Judicial Process	3
CRJS 355 Criminological Theory	3
ECON 301 Microeconomic Theory	3
ECON 302 Macroeconomic Theory	3
ECON 419/HIST 333 History of Economic Thought	3
POLI 310 Public Policy	3
POLI 314 U.S. Constitutional Law	3
POLI 315 Courts and Politics	3
SOCY 302 Contemporary Social Problems	3
SOCY 430 Politics, Power and Ideology	3

(or other appropriate courses approved by the department of philosophy)

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester	Hours
UNIV 101 Introduction to the University	1
UNIV 111 Focused Inquiry I	3
Approved H&S diverse and global communities course	3
Approved quantitative literacy course	3-4
Open electives	5-6
Term Hours:	15-17

### Spring semester

HUMS 202 Choices in a Consumer Society	1
UNIV 112 Focused Inquiry II	3
Approved H&S General Education elective	3-4
Approved H&S human, social and political behavior course	3-4
Open electives	5-6
Term Hours:	15-18

### Sophomore year

#### Fall semester

PHIL 101 Introduction to Philosophy	3
or PHIL 103 or Ancient Greek and Medieval Western Philosophy	
or PHIL 104 or Modern Western Philosophy	
PHIL 201 Critical Thinking About Moral Problems (to satisfy both a major requirement and H&S literature and civilization)	3
UNIV 200 Inquiry and the Craft of Argument	3
Experiential fine arts course	1-3
Foreign language (101-level)	4
Term Hours:	14-16

#### Spring semester

PHIL 222 Logic	3
Approved H&S General Education elective	3-4
Approved H&S science and technology	3-4
Foreign language (102-level)	4
Open elective	3
Term Hours:	16-18

### Junior year

#### Fall semester

PHIL 320 Philosophy of Law	3
Non-PHIL course from list	3
Open electives	9
Term Hours:	15

#### Spring semester

PHIL 320 Philosophy of Law	3
or PHIL 327 or Ethical Theory	
or PHIL 335 or Social and Political Philosophy	
Non-PHIL course from list	3
Open electives	9
Term Hours:	15

### Senior year

#### Fall semester

PHIL 301 Mind and Reality	3
or PHIL 302 or Reason and Knowledge	
or PHIL 303 or Philosophy of Language	
PHIL elective	3
Open electives	9
Term Hours:	15

#### Spring semester

PHIL 490 Seminar in Philosophy (capstone course)	3
Open electives	12
Term Hours:	15
Total Hours:	120-129



## Philosophy, Bachelor of Arts (B.A.) with a concentration in philosophy and law

The Bachelor of Arts in Philosophy with a concentration in philosophy and law is an interdisciplinary curriculum requiring a minimum of 120 credits, with at least 30 of those credits in the major area, at least half of which must be upper-level.

Students whose main interests are philosophy of law and the relation between philosophy and law (and who may wish to pursue graduate work in law and related areas) will probably want to choose the philosophy and law concentration.

### Learning outcomes

Upon completing this program, students will:

1. Demonstrate a good knowledge of a facility with the methods and concepts of modern, analytic philosophy.
2. Demonstrate a good knowledge of the current state of academic discussion of some of the central philosophical topics.
3. Demonstrate some knowledge of the history of philosophy, including both major themes and movements and some specific figures and systems.
4. Demonstrate the ability to think critically and systematically about philosophical problems, both abstract and practical, and to write clearly and cogently about them.
5. Demonstrate the ability to construct and analyze arguments clearly and cogently, independently of their subject matter.
6. Demonstrate a good knowledge of philosophical questions about law including but not limited to questions about the nature of law and its authority.
7. Demonstrate a good knowledge of the specific workings of the law especially with respect to constitutional issues.

## Degree requirements for Philosophy, Bachelor of Arts with a philosophy and law concentration

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		

Approved H&S literature and civilization (fulfills University Core humanities/fine arts)

Approved H&S science and technology (fulfills University Core natural/physical sciences)

Approved H&S General Education electives 6-8

Experiential fine arts <sup>1</sup> 1-3

Foreign language through the 102 level (by course or placement) 0-8

Total Hours 11-23

<sup>1</sup> Course offered by the School of the Arts

### Major requirements

Select one of the following: 3

PHIL 101	Introduction to Philosophy	
PHIL 103	Ancient Greek and Medieval Western Philosophy	
PHIL 104	Modern Western Philosophy	

Select one of the following: 3

PHIL 201	Critical Thinking About Moral Problems	
PHIL 211	History of Ethics	
PHIL 212	Ethics and Applications	
PHIL 213	Ethics and Health Care	
PHIL 214	Ethics and Business	

PHIL 222 Logic 3

Select one of the following: 3

PHIL 301	Mind and Reality	
PHIL 302	Reason and Knowledge	
PHIL 303	Philosophy of Language	
PHIL 320	Philosophy of Law	3
PHIL 327	Ethical Theory	3
or PHIL 335	Social and Political Philosophy	

PHIL 490 Seminar in Philosophy 3

Select 9 hours of the following non-PHIL courses: 9

CRJS 302	Legal Writing <sup>1</sup>	
CRJS 324	Courts and the Judicial Process <sup>1</sup>	
CRJS 330		
CRJS 355	Criminological Theory <sup>1</sup>	
FRSC 375	Forensic Evidence, Law and Criminal Procedure <sup>1</sup>	
POLI 313	U.S. Constitutional Law: Civil Rights and Civil Liberties	
POLI 314	U.S. Constitutional Law	
POLI 315	Courts and Politics	
POLI 316	Women and the Law	
POLI 372	Ethics, Law and Governance	
Other appropriate courses approved by the Department of Philosophy		

Total Hours 30

<sup>1</sup> Course is restricted to the major in the relevant program.

## Open electives

Select 44-58 open elective credits	44-58
Total Hours	44-58

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
	Approved H&S diverse and global communities course	3
	Approved quantitative literacy course	3-4
	Open electives	5-6
Term Hours:		15-17

### Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
	Approved H&S General Education elective	3-4
	Approved H&S human, social and political behavior course	3-4
	Open electives	5-6
Term Hours:		15-18

### Sophomore year

Fall semester		Hours
PHIL 101	Introduction to Philosophy	3
or PHIL 103	or Ancient Greek and Medieval Western Philosophy	
or PHIL 104	or Modern Western Philosophy	
PHIL 201	Critical Thinking About Moral Problems <sup>1</sup>	3
UNIV 200	Inquiry and the Craft of Argument	3
	Experiential fine arts course	1-3
	Foreign language <sup>2</sup>	4
Term Hours:		14-16

### Spring semester

PHIL 222	Logic	3
	Approved H&S General Education elective	3-4
	Approved H&S science and technology	3-4
	Foreign language <sup>3</sup>	4
	Open elective	3
Term Hours:		16-18

### Junior year

Fall semester		Hours
PHIL 320	Philosophy of Law	3
	Non-PHIL course from list	3
	Open electives	9
Term Hours:		15

### Spring semester

PHIL 327	Ethical Theory	3
or PHIL 335	or Social and Political Philosophy	
	Non-PHIL course from list	3

Open electives	9
Term Hours:	15

### Senior year

Fall semester		Hours
PHIL 301	Mind and Reality	3
or PHIL 302	or Reason and Knowledge	
or PHIL 303	or Philosophy of Language	
	Select one non-PHIL course from list	3
	Open electives	9
Term Hours:		15
Spring semester		Hours
PHIL 490	Seminar in Philosophy <sup>4</sup>	3
	Open electives	12
Term Hours:		15
Total Hours:		120-129

- <sup>1</sup> Fulfills H&S literature and civilization  
<sup>2</sup> 101-level  
<sup>3</sup> 102-level  
<sup>4</sup> Capstone course

## Philosophy, Bachelor of Arts (B.A.) with a concentration in philosophy and science

The Bachelor of Arts in Philosophy with a concentration in philosophy and science is an interdisciplinary curriculum requiring a minimum of 120 credits, with at least 30 of those credits in the major area, at least half of which must be upper-level.

Students with a strong interest in the philosophy of science and the relation between philosophy and science (and those considering graduate work in an area of science) will probably want to choose the philosophy and science concentration.

## Learning outcomes

Upon completing this program, students will:

1. Demonstrate a good knowledge of and facility with the methods and concepts of modern, analytic philosophy.
2. Demonstrate a good knowledge of the current state of academic discussion of some of the central philosophical topics.
3. Demonstrate some knowledge of the history of philosophy, including both major themes and movements and some specific figures and systems.
4. Demonstrate the ability to think critically and systematically about philosophical problems, both abstract and practical, and to write clearly and cogently about them.
5. Demonstrate the ability to construct and analyze arguments clearly and cogently, independently of their subject matter.
6. Demonstrate a good knowledge of philosophical questions about scientific inquiry including but not limited to questions about scientific explanation, the confirmation and disconfirmation of scientific theories, and what distinguishes science from non-science.

7. Demonstrate a good knowledge of a particular area of science including the research methods of that area of science.

## Degree requirements for Philosophy, Bachelor of Arts with a philosophy and science concentration

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Major requirements

Select one of the following:		3
PHIL 101	Introduction to Philosophy	
PHIL 103	Ancient Greek and Medieval Western Philosophy	
PHIL 104	Modern Western Philosophy	
Select one of the following:		3
PHIL 201	Critical Thinking About Moral Problems	
PHIL 211	History of Ethics	
PHIL 212	Ethics and Applications	
PHIL 213	Ethics and Health Care	
PHIL 214	Ethics and Business	
PHIL 222	Logic	3
Select two of the following:		6
PHIL 301	Mind and Reality	

PHIL 302	Reason and Knowledge	
PHIL 303	Philosophy of Language	
PHIL 320	Philosophy of Law	
PHIL 327	Ethical Theory	
PHIL 335	Social and Political Philosophy	
PHIL 331	Philosophy of Science	3
PHIL 490	Seminar in Philosophy (capstone)	3
Scientific focus area: Choose one of the scientific focus areas listed below. Each focus area consists of a three-credit course on the research methods of a scientific discipline and six upper-level credits in that discipline.		9
Total Hours		30

### Open electives

Select 44-58 open elective credits 44-58

### Total minimum requirement 120 credits

#### Scientific focus areas

##### Anthropology

ANTH 302 Archaeological Theory  
or ANTH 303 Archaeological Methods and Research Design

Select six additional upper-level credits in ANTH courses

##### Bioinformatics

LFSC 301 Integrative Life Sciences Research

Select six upper-level credits in BNFO courses.

##### Chemistry

CHEM 309 Quantitative Analysis  
or INSC 300 Experiencing Science

Select six additional upper-level credits in CHEM courses

##### Computer science

CMSC 303 Introduction to the Theory of Computation

Select six additional upper-level credits in CMSC courses

##### Economics

ECON 300 Contemporary Economic Issues

Select six additional upper-level credits in ECON courses

##### Environmental studies

LFSC 301 Integrative Life Sciences Research

Select six additional upper-level credits in ENVS courses

##### Mathematical sciences

MATH 300 Introduction to Mathematical Reasoning

Select six additional upper-level credits in MATH or STAT or OPER courses

##### Political science

POLI/SOCY 320	Research Methods in the Social Sciences	
Select six additional upper-level credits in POLI courses		

**Psychology**

PSYC 317	Experimental Methods <sup>1</sup>	
Select six additional upper-level credits in PSYC courses		

<sup>1</sup> This course is restricted to the majors in the relevant program.

**Sociology**

POLI/SOCY 320	Research Methods in the Social Sciences	
Select six additional upper-level credits in SOCY courses		

**Physics**

PHYS 320	Modern Physics	
or INSC 300	Experiencing Science	
Select six additional upper-level credits in PHYS courses (or other appropriate courses approved by the Department of Philosophy)		

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Freshman year**

Fall semester		Hours
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved H&S diverse and global communities course		3
Approved quantitative literacy course		3-4
Open electives		5-6
Term Hours:		15-17

**Spring semester**

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Approved H&S General Education elective		3-4
Approved H&S human, social and political behavior course		3-4
Open electives		5-6
Term Hours:		15-18

**Sophomore year**

Fall semester		Hours
PHIL 101	Introduction to Philosophy	3
or PHIL 103	or Ancient Greek and Medieval Western Philosophy	
or PHIL 104	or Modern Western Philosophy	
PHIL 201	Critical Thinking About Moral Problems	3
UNIV 200	Inquiry and the Craft of Argument	3
Experiential fine arts course		1-3
Foreign language (101-level)		4
Term Hours:		14-16

**Spring semester**

PHIL 222	Logic	3
----------	-------	---

Approved H&S General Education elective	3-4
Approved H&S science and technology	3-4
Foreign language (102-level)	4
Open elective	3
Term Hours:	16-18

**Junior year****Fall semester**

PHIL 331	Philosophy of Science	3
Open electives		9
Upper-level course from scientific focus area		3
Term Hours:		15

**Spring semester**

PHIL 301	Mind and Reality	3
or PHIL 302	or Reason and Knowledge	
or PHIL 303	or Philosophy of Language	
or PHIL 303	or Ethical Theory	
or PHIL 303	or Social and Political Philosophy	
or PHIL 327		
or PHIL 335		
Open electives		9
Research methods course from scientific focus area		3
Term Hours:		15

**Senior year****Fall semester**

PHIL 301	Mind and Reality	3
or PHIL 302	or Reason and Knowledge	
or PHIL 302	or Philosophy of Language	
or PHIL 303	or Ethical Theory	
or PHIL 303	or Social and Political Philosophy	
or PHIL 327		
or PHIL 335		
Open electives		9
Upper-level course from scientific focus area		3
Term Hours:		15

**Spring semester**

PHIL 490	Seminar in Philosophy <sup>1</sup>	3
Open electives		12
Term Hours:		15
Total Hours:		120-129

<sup>1</sup> Capstone course

## Philosophy, minor in

A philosophy minor consists of 18 credits, including:

PHIL 103	Ancient Greek and Medieval Western Philosophy	3
or PHIL 104	Modern Western Philosophy	
Select two additional PHIL courses		6

Select at least nine credits in upper-level (300-400) courses	9
Total Hours	18

## Philosophy of law, minor in

A minor in philosophy of law consists of 18 credits, to include:

PHIL 320	Philosophy of Law	3
PHIL 327	Ethical Theory	3
PHIL 335	Social and Political Philosophy	3
Select one of the following:		3
PHIL 201	Critical Thinking About Moral Problems	
PHIL 211	History of Ethics	
PHIL 212	Ethics and Applications	
PHIL 213	Ethics and Health Care	
PHIL 214	Ethics and Business	
Select two of the following:		6
HIST 408	Studies in Modern American History: _____ (when topic is American constitutional and legal development)	
POLI 313	U.S. Constitutional Law: Civil Rights and Civil Liberties	
POLI 314	U.S. Constitutional Law	
POLI 341	History of Political Theory: Classical to Modern	
POLI 342	History of Political Theory: Modern to Contemporary	
Total Hours		18

## Department of Physics

**Robert Gowdy, Ph.D.**

Associate professor and chair

physics.vcu.edu (<http://www.physics.vcu.edu>)

The Department of Physics offers programs leading to the Bachelor of Science in Physics and the Master of Science in Physics and Applied Physics. The department also offers an accelerated B.S.-M.S. program that allows students in the baccalaureate program to take graduate courses that will count toward the M.S. in Physics and Applied Physics degree.

- Physics, Bachelor of Science (B.S.) (p. 142)
- Accelerated Bachelor of Science in Physics and Master of Science in Physics and Applied Physics (p. 144)
- Physics, minor in (p. 144)

## Physics, Bachelor of Science (B.S.)

The Bachelor of Science in Physics requires a minimum of 120 credits, including 54 credits in physics and physics-related courses, as detailed in the course lists.

The curriculum in physics prepares students for technical careers in physics or an allied area, for careers in engineering and for the teaching of physics in secondary schools. The curriculum also prepares students for graduate studies in physics or a related area.

## Learning outcomes

Students will learn to perform scientific reasoning and complex problem-solving. To physics majors we provide a fundamental understanding of the main areas of physics so that they are prepared for jobs that use physics-based technologies. They are expected to have mastered the analytical approach to solving technical problems by identifying simple subsystems that obey known physical laws and using these laws to approximate the behavior of the whole system.

## Double major in engineering and physics

A detailed description of this program (p. 428) can be found in the "School of Engineering" section of this bulletin.

## Degree requirements for Physics, Bachelor of Science (B.S.)

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

MATH 200	Calculus with Analytic Geometry (fulfills University Core quantitative literacy)	4
MATH 201	Calculus with Analytic Geometry	4
MATH 301	Differential Equations	3



MATH 307	Multivariate Calculus	4
Total Hours		15

## Major requirements

### Required physics courses

PHYS 207	University Physics I	5
PHYS 208	University Physics II	5
PHYS 301	Classical Mechanics I	3
PHYS 320 & PHYZ 320	Modern Physics and Modern Physics Laboratory	4
PHYS 340	Statistical Mechanics and Thermodynamics	3
PHYS 376	Electromagnetism	3
PHYS 380	Quantum Physics I	3
PHYS 450	Senior Physics Laboratory	3
PHYS 490	Seminar in Conceptual Physics (capstone)	1

### Elective physics and physics-related courses

Select a total of nine credits from the list of elective physics and physics-related courses provided below. Those students who have their primary major in physics are required to fulfill at least three of these credits using upper-level physics courses	9
Total Hours	39

## Open electives

Select 20-34 open elective credits	20-34
------------------------------------	-------

## Total minimum requirement 120 credits

### Electives

Any of the following upper-level physics courses:

PHYS 302	Classical Mechanics II
PHYS 325	Visualization of Physics Using Mathematica
PHYS 351	Guided Inquiry for University Physics I
PHYS 352	Guided Inquiry for University Physics II
PHYS 397	Directed Study (maximum of 3 credits)
PHYS 420	Quantum Physics II
PHYS 422	Optics
PHYS 440	Introduction to Condensed Matter Physics
PHYS 491	Topics in Physics (maximum of 3 credits)
PHYS 492	Independent Study (maximum of 3 credits)
PHYS 571	Theoretical Mechanics
PHYS 573	Analytical Methods in Physics
PHYS 576	Electromagnetic Theory
PHYS 580	Quantum Mechanics

Any of the following math or statistics courses:

MATH 310	Linear Algebra
MATH 511	Applied Linear Algebra
MATH 512	Complex Analysis for Applications

MATH 515 & MATH 516	Numerical Analysis and Numerical Analysis II
MATH 517 & MATH 518	Methods of Applied Mathematics and Methods of Applied Mathematics
MATH 533	Partial Differential Equations I

Any of the following chemistry courses:

CHEM 409	Instrumental Analysis
CHEM 510	Atomic and Molecular Structure

Any of the following engineering courses:

CLSE 301	Transport Phenomena I
EGMN 301	Fluid Mechanics
EGMN 436	Engineering Materials
EGRB 303	Biotransport Processes
EGRB 427	Biomaterials
EGRE 224	Introduction to Microelectronics
EGRE 303	Electronic Devices
EGRE 307	Integrated Circuits

Those students intending to pursue graduate studies in physics should take:

PHYS 302	Classical Mechanics II	3
PHYS 420	Quantum Physics II	3
PHYS 440	Introduction to Condensed Matter Physics	3
PHYS 571	Theoretical Mechanics	3
PHYS 573	Analytical Methods in Physics	3
PHYS 576	Electromagnetic Theory	3
PHYS 580	Quantum Mechanics	3

Those interested in experimental physics should also take one or more credits in PHYS 397 or PHYS 492.

Courses not applicable toward the major:

The following courses are not applicable toward the physics major requirements but may be used as general electives toward the bachelor's degree:

PHYS 101	Foundations of Physics
PHYS 103	Elementary Astronomy
PHYS 107	Wonders of Technology
PHYS 201	General Physics
PHYS 202	General Physics
PHYS 215	Science, Technology and Society
PHYS 291	Topics in Physical Science
PHYS/MHIS 307	The Physics of Sound and Music
PHYS/ENVS 315	Energy and the Environment
PHYS 391	Topics in Physics
PHYZ 101	Foundations of Physics Laboratory
PHYZ 103	Elementary Astronomy Laboratory

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Freshman year**

Fall semester			Hours
MATH 200	Calculus with Analytic Geometry		4
UNIV 111	Focused Inquiry I		3
General Education requirements			8
Term Hours:			15

**Spring semester**

MATH 201	Calculus with Analytic Geometry		4
PHYS 207	University Physics I		5
UNIV 112	Focused Inquiry II		3
General Education requirements (including HUMS 202 Choices in a Consumer Society)			3
Term Hours:			15

**Sophomore year**

Fall semester			Hours
MATH 307	Multivariate Calculus		4
PHYS 208	University Physics II		5
UNIV 200	Inquiry and the Craft of Argument		3
General Education requirements			3
Term Hours:			15

**Spring semester**

MATH 301	Differential Equations		3
PHYS 301	Classical Mechanics I		3
PHYS 320	Modern Physics		4
& PHYZ 320	and Modern Physics Laboratory		
General Education requirements			5
Term Hours:			15

**Junior year**

Fall semester			Hours
Elective physics and physics-related courses			6
General Education requirements			9
Term Hours:			15

**Spring semester**

PHYS 376	Electromagnetism		3
PHYS 380	Quantum Physics I		3
General Education requirements and open electives			9
Term Hours:			15

**Senior year**

Fall semester			Hours
PHYS 340	Statistical Mechanics and Thermodynamics		3
Elective physics or physics-related course			3
Open electives			9
Term Hours:			15

**Spring semester**

PHYS 450	Senior Physics Laboratory		3
PHYS 490	Seminar in Conceptual Physics (capstone)		1
Open electives			11
Term Hours:			15
Total Hours:			120

## Accelerated Bachelor of Science (B.S.) in Physics and Master of Science (M.S.) in Physics and Applied Physics

Students who are enrolled in the Bachelor of Science in Physics program may elect to take graduate courses that will count toward the Master of Science in Physics and Applied Physics degree. Up to six hours of graduate credit may be earned in this way without any special provision. In order to offer more than six hours of pre-admission graduate credit toward the graduate degree, a student must apply to the physics department Graduate Admission Committee for admission to the accelerated B.S.-M.S. program. Persons applying for admission to this program should (1) submit a curricular plan for completing the bachelor's degree within two years or its part-time equivalent; (2) indicate which graduate courses they intend to offer toward the physics master's degree; (3) have a minimum B average.

The M.S. Degree Completion Form should be accompanied by a memo from the Department of Physics Graduate Admission Committee to indicate which graduate courses were taken under the accelerated B.S.-M.S. program. See the program page in the Graduate Bulletin (<http://bulletin.vcu.edu/graduate/college-humanities-sciences/physics/physics-applied-physics-ms-accelerated-physics-bs-masters>) for additional information.

## Physics, minor in

A minor in physics requires 20 credits consisting of the following courses:

PHYS 207	University Physics I	5
PHYS 208	University Physics II	5
PHYS 320	Modern Physics	4
& PHYZ 320	and Modern Physics Laboratory	
Select six credits of physics or physics-related courses that are acceptable for the major		6
Total Hours		20

## Department of Political Science

**Deirdre M. Condit, Ph.D.**

Associate professor and chair

[politicalscience.vcu.edu](http://politicalscience.vcu.edu) (<http://politicalscience.vcu.edu>)

Political science is the study of governments, public policies and political processes, systems, and political behavior. Political science students gain a versatile set of skills that can be applied in a wide range of exciting careers in federal, state and local governments; law; business; international organizations; nonprofit associations and organizations; campaign management and polling; journalism; education; electoral politics; and research.

The Department of Political Science faculty includes professors with a broad spectrum of expertise in public sector management, international affairs, genocide and human rights, feminist political theory, international and comparative health, Russian politics, human security, U.S. presidential decision-making for national security and foreign policy, Asian politics, Middle Eastern politics and societies, and U.S. information/secretary politics.

- Political Science, Bachelor of Arts (B.A.) with a concentration in:
  - Civil rights (p. 145)
  - Comparative politics (p. 146)
  - Human security (p. 148)
  - International relations (p. 150)
  - Political theory and methodology (p. 152)
  - Politics and government (p. 153)
  - Public policy and administration (p. 155)
  - U.S. government (p. 157)
- Accelerated Bachelor of Arts (B.A.) in Political Science and Master of Public Administration (M.P.A.) (p. 159)
- Nonprofit management and administration, minor in (p. 159)
- Political science, minor in (p. 160)
- Public management, minor in (p. 160)

## Political Science, Bachelor of Arts (B.A.) with a concentration in civil rights

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Assumptions, methods and analytical tools  
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues  
Students will demonstrate knowledge of current political and policy issues.
3. Theory and principles of four subfields  
Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.
4. Advanced understanding of one subfield  
Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.
5. Expository and analytic writing  
Students will demonstrate skill in expository and analytic writing in the political science discipline
6. Political behavior  
Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

## Honors in political science

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 with an A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

## Special requirements

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of nine credits from internships, mentorships or independent studies toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

## Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in civil rights

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Foreign language (201-level)		3
Foreign language (202-level)		3
Total Hours		6

**Major requirements**

POLI 103	U.S. Government (meets approved H&S human, social and political behavior requirement)	3
POLI/INTL 105	International Relations (meets approved H&S diverse and global communities requirement)	3
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
POLI 490	Senior Seminar	3
POLI electives		6
Select four concentration electives from the list below		12
Total Hours		33

**Open electives**

Select 35-49 open elective credits	35-49
------------------------------------	-------

**Total minimum requirement 120 credits****Electives**

Select four civil rights concentration electives from the following:	12
--	----

POLI/AFAM 302	Politics of the Civil Rights Movement
POLI 314	U.S. Constitutional Law
POLI 315	Courts and Politics
POLI/GSWs 316	Women and the Law
POLI/AFAM/GSWs 318	Politics of Race, Class and Gender
POLI/GSWs 319	Women and American Politics
POLI/AFAM 343	Black Political Thought
POLI/AFAM 345	African-American Politics
POLI 372	Ethics, Law and Governance

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Freshman year**

Fall semester		Hours
POLI 103	U.S. Government	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved quantitative literacy		3
Foreign language (101-level)		4
Term Hours:		14

**Spring semester**

HUMS 202	Choices in a Consumer Society	1
POLI 105 or INTL 105	International Relations or International Relations	3
UNIV 112	Focused Inquiry II	3
Approved natural/physical sciences		3-4
Foreign language (102-level)		4
Term Hours:		14-15

**Sophomore year****Fall semester**

POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S literature and civilization		3
Foreign language (201-level)		3
Term Hours:		15

**Spring semester**

Concentration electives	6
Experiential fine arts	1-3
Foreign language (202-level)	3
Open electives	4
Term Hours:	14-16

**Junior year****Fall semester**

POLI elective	3
Approved H&S General Education electives	3-4
Open electives	9
Term Hours:	15-16

**Spring semester**

Approved H&S General Education electives	3-4
Concentration elective	3
Open electives	9
<hr/>	
Term Hours:	15-16

**Senior year****Fall semester**

POLI 490	Senior Seminar	3
Concentration elective		3
Open electives		12
Term Hours:		18

**Spring semester**

POLI elective	3
Open electives	12
Term Hours:	15
Total Hours:	120-125

## Political Science, Bachelor of Arts (B.A.) with a concentration in comparative politics

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Assumptions, methods and analytical tools  
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues  
Students will demonstrate knowledge of current political and policy issues.
3. Theory and principles of four subfields  
Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.
4. Advanced understanding of one subfield  
Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.
5. Expository and analytic writing  
Students will demonstrate skill in expository and analytic writing in the political science discipline
6. Political behavior  
Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

## Honors in political science

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 Senior Seminar with an A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

## Special requirements

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of nine credits from internships, mentorships, or independent studies toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

## Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in comparative politics

### General Education requirements

University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	3
UNIV 200 Inquiry and the Craft of Argument	3
Approved humanities/fine arts	3
Approved natural/physical sciences	3-4
Approved quantitative literacy	3-4

Approved social/behavioral sciences	3-4
Total Hours	21-24

### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202 Choices in a Consumer Society	1
Approved H&S diverse and global communities	3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)	
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
Total Hours	11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Foreign language (201-level)	3
Foreign language (202-level)	3
Total Hours	6

### Major requirements

POLI 103 U.S. Government	3
POLI/INTL 105 International Relations	3
POLI 107 Political Theory	3
POLI 109 Comparative Politics	3
POLI 490 Senior Seminar	3
POLI electives	6
Concentration electives (Choose four from list below)	12
Total Hours	33

### Open electives

Select 35-49 credits of open electives	35-49
--	-------

### Total minimum requirement 120

#### Electives

Select four comparative politics concentration electives from the following: 12

POLI/ENVS 311 Politics of the Environment	
POLI/AFAM/GSWS 318 Politics of Race, Class and Gender	
POLI/INTL 351 Governments and Politics of the Middle East	
POLI/INTL 352 European Governments and Politics	
POLI/INTL 353 Latin American Governments and Politics	
POLI/INTL 354 Russian and Post-Soviet Politics	
POLI/INTL 355 Asian Governments and Politics	
POLI/AFAM/INTL 356 Government and Politics of Africa	



POLI/AFAM/INTL 357	Politics of Southern Africa
POLI/INTL 358	Concepts of Comparative Government
POLI 359	The Politics of Developing Areas
POLI 360/INTL 480	China in Transition
POLI 494	Political Science Mentorship

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
POLI 103	U.S. Government	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved quantitative literacy		3
Foreign language (101-level)		4
Term Hours:		14

#### Spring semester

HUMS 202	Choices in a Consumer Society	1
POLI 105	International Relations (INTL 105)	3
UNIV 112	Focused Inquiry II	3
Approved natural/physical sciences		3-4
Foreign language (102-level)		4
Term Hours:		14-15

#### Sophomore year

Fall semester		Hours
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S literature and civilization		3
Foreign language (201-level)		3
Term Hours:		15

#### Spring semester

Concentration electives		6
Experiential fine arts		1-3
Foreign language (202-level)		3
Open electives		4
Term Hours:		14-16

#### Junior year

Fall semester		Hours
POLI elective		3
Approved H&S General Education electives		3-4
Open electives		9
Term Hours:		15-16

#### Spring semester

Approved H&S General Education electives		3-4
Concentration elective		3
Open electives		9
Term Hours:		15-16

#### Senior year

#### Fall semester

POLI 490	Senior Seminar	3
Concentration elective		3
Open electives		12
Term Hours:		18

#### Spring semester

POLI elective		3
Open electives		12
Term Hours:		15
Total Hours:		120-125

## Political Science, Bachelor of Arts (B.A.) with a concentration in human security

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Assumptions, methods and analytical tools  
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues  
Students will demonstrate knowledge of current political and policy issues.
3. Theory and principles of four subfields  
Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.
4. Advanced understanding of one subfield  
Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.
5. Expository and analytic writing  
Students will demonstrate skill in expository and analytic writing in the political science discipline
6. Political behavior  
Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

## Honors in political science

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 Senior Seminar with an

A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

## Special requirements

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of nine credits from internships, mentorships or independent studies toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

## Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in human security

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	3
UNIV 200 Inquiry and the Craft of Argument	3
Approved humanities/fine arts	3
Approved natural/physical sciences	3-4
Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
<b>Total Hours</b>	<b>21-24</b>

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202 Choices in a Consumer Society	1
Approved H&S diverse and global communities	3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)	
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
<b>Total Hours</b>	<b>11-23</b>

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Foreign language (201-level)	3
Foreign language (202-level)	3
<b>Total Hours</b>	<b>6</b>

### Major requirements

POLI 103 U.S. Government	3
--------------------------	---

POLI/INTL 105 International Relations	3
POLI 107 Political Theory	3
POLI 109 Comparative Politics	3
POLI 380 Human Security	3
POLI 490 Senior Seminar	3
POLI electives	6
Concentration electives (Choose three from list below)	9
<b>Total Hours</b>	<b>33</b>

### Open electives

Select 35-49 credits of open electives 35-49

### Total minimum requirement 120

#### Electives

Select four human security concentration electives from the following: 12

POLI/INTL 351 Governments and Politics of the Middle East	
POLI/AFAM/INTL 356 Government and Politics of Africa	
POLI/AFAM/INTL 357 Politics of Southern Africa	
POLI 359/INTL 452 The Politics of Developing Areas	
POLI/INTL 362 International Organizations and Institutions	
POLI/GSWS 366/INTL 368 Women and Global Politics	
POLI 381 The Politics of Genocide and Human Rights	
POLI 382 International Health	

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester	Hours
POLI 103 U.S. Government	3
UNIV 101 Introduction to the University	1
UNIV 111 Focused Inquiry I	3
Approved quantitative literacy	3
Foreign language (101-level)	4
<b>Term Hours:</b>	<b>14</b>

#### Spring semester

HUMS 202 Choices in a Consumer Society	1
POLI 105 International Relations (INTL 105)	3
UNIV 112 Focused Inquiry II	3
Approved natural/physical sciences	3-4
Foreign language (102-level)	4
<b>Term Hours:</b>	<b>14-15</b>

#### Sophomore year

Fall semester	
POLI 107 Political Theory	3
POLI 109 Comparative Politics	3

UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S literature and civilization		3
Foreign language (201-level)		3
Term Hours:		15
<b>Spring semester</b>		
POLI 380	Human Security	3
Concentration electives		3
Experiential fine arts		1-3
Foreign language (202-level)		3
Open electives		4
Term Hours:		14-16
<b>Junior year</b>		
<b>Fall semester</b>		
POLI elective		3
Approved H&S General Education electives		3-4
Open electives		9
Term Hours:		15-16
<b>Spring semester</b>		
Approved H&S General Education electives		3-4
Concentration elective		3
Open electives		9
Term Hours:		15-16
<b>Senior year</b>		
<b>Fall semester</b>		
POLI 490	Senior Seminar	3
Concentration elective		3
Open electives		12
Term Hours:		18
<b>Spring semester</b>		
POLI elective		3
Open electives		12
Term Hours:		15
Total Hours:		120-125

## Political Science, Bachelor of Arts (B.A.) with a concentration in international relations

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Assumptions, methods and analytical tools  
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues  
Students will demonstrate knowledge of current political and policy issues.
3. Theory and principles of four subfields  
Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.
4. Advanced understanding of one subfield  
Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.
5. Expository and analytic writing  
Students will demonstrate skill in expository and analytic writing in the political science discipline
6. Political behavior  
Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

### Honors in political science

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 with an A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

### Special requirements

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of six internship and three independent study credits toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

## Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in international relations

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

## Collateral requirements

Foreign language (201-level)	3
Foreign language (202-level)	3
Total Hours	6

## Major requirements

POLI 103	U.S. Government (meets approved H&S human, social and political behavior requirement)	3
POLI/INTL 105	International Relations (meets approved H&S diverse and global communities requirement)	3
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
POLI 490	Senior Seminar	3
POLI electives		6
Select four concentration electives from the list below		12
Total Hours		33

## Open electives

Select 35-49 open elective credits	35-49
------------------------------------	-------

## Total minimum requirement 120 credits

### Electives

Select four international relations concentration electives from the following:	12
---	----

POLI/INTL 358	Concepts of Comparative Government
POLI 359/INTL 452	The Politics of Developing Areas
POLI/INTL 361	Issues in World Politics
POLI/INTL 362	International Organizations and Institutions
POLI/INTL 363	U.S. Foreign Policy
POLI/INTL 364	Vietnam
POLI/INTL 365	International Political Economy
POLI/GSWs 366/INTL 368	Women and Global Politics
POLI/CRJS 367/HSEP 301	Terrorism

POLI 368/INTL 468	Comparative National Security Policy
POLI 369	U.S. National Security
POLI 382	International Health
POLI 494	Political Science Mentorship

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
POLI 103	U.S. Government	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved quantitative literacy		3
Foreign language (101-level)		4
Term Hours:		14

### Spring semester

HUMS 202	Choices in a Consumer Society	1
POLI 105 or INTL 105	International Relations or International Relations	3
UNIV 112	Focused Inquiry II	3
Approved natural/physical sciences		3-4
Foreign language (102-level)		4
Term Hours:		14-15

### Sophomore year

Fall semester		
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S literature and civilization		3
Foreign language (201-level)		3
Term Hours:		15

### Spring semester

Concentration electives		6
Experiential fine arts		1-3
Foreign language (202-level)		3
Open electives		4
Term Hours:		14-16

### Junior year

Fall semester		
POLI elective		3
Approved H&S General Education electives		3-4
Open electives		9
Term Hours:		15-16

### Spring semester

Approved H&S General Education electives		3-4
Concentration elective		3
Open electives		9
Term Hours:		15-16

### Senior year

#### Fall semester

POLI 490 Senior Seminar	3
Concentration elective	3
Open electives	12
Term Hours:	18
<b>Spring semester</b>	
POLI elective	3
Open electives	12
Term Hours:	15
Total Hours:	120-125

## Political Science, Bachelor of Arts (B.A.) with a concentration in political theory and methodology

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Assumptions, methods and analytical tools  
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues  
Students will demonstrate knowledge of current political and policy issues.
3. Theory and principles of four subfields  
Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.
4. Advanced understanding of one subfield  
Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.
5. Expository and analytic writing  
Students will demonstrate skill in expository and analytic writing in the political science discipline
6. Political behavior  
Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

### Honors in political science

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 Senior Seminar

with an A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

### Special requirements

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of nine credits from internships, mentorships or independent studies toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

## Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in political theory and methodology

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Foreign language (201-level)	3
Foreign language (202-level)	3
Total Hours	6

### Major requirements

POLI 103	U.S. Government	3
----------	-----------------	---



POLI/INTL 105	International Relations	3
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
POLI 341	History of Political Theory: Classical to Modern	3
POLI 490	Senior Seminar	3
POLI electives		6
Concentration electives (Choose three from list below)		9
Total Hours		33

## Open electives

Select 35-49 credits of open electives 35-49

## Total minimum requirement 120

### Electives

Select four political theory and methodology concentration courses from the following: 12

POLI 314	U.S. Constitutional Law	
POLI/AFAM/ GSWS 318	Politics of Race, Class and Gender	
POLI/SOCY 320	Research Methods in the Social Sciences	
POLI 342	History of Political Theory: Modern to Contemporary	
POLI/AFAM 343	Black Political Thought	
POLI 344	Contemporary Political Theory	
POLI/AFAM 345	African-American Politics	
POLI/INTL 358	Concepts of Comparative Government	
POLI/INTL 365	International Political Economy	
POLI 448	Scope and Method of Political Science	
POLI 494	Political Science Mentorship	

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
POLI 103	U.S. Government	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved quantitative literacy		3
Foreign language (101-level)		4
Term Hours:		14

### Spring semester

HUMS 202	Choices in a Consumer Society	1
POLI 105	International Relations (INTL 105)	3
UNIV 112	Focused Inquiry II	3
Approved natural/physical sciences		3-4
Foreign language (102-level)		4
Term Hours:		14-15

### Sophomore year

#### Fall semester

POLI 107	Political Theory	3
----------	------------------	---

POLI 109	Comparative Politics	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S literature and civilization		3
Foreign language (201-level)		3
Term Hours:		15

### Spring semester

POLI 341	History of Political Theory: Classical to Modern	3
Concentration electives		3
Experiential fine arts		1-3
Foreign language (202-level)		3
Open electives		4
Term Hours:		14-16

### Junior year

#### Fall semester

POLI elective		3
Approved H&S General Education electives		3-4
Open electives		9
Term Hours:		15-16

### Spring semester

Approved H&S General Education electives		3-4
Concentration elective		3
Open electives		9
Term Hours:		15-16

### Senior year

#### Fall semester

POLI 490	Senior Seminar	3
Concentration elective		3
Open electives		12
Term Hours:		18

### Spring semester

POLI elective		3
Open electives		12
Term Hours:		15
Total Hours:		120-125

## Political Science, Bachelor of Arts (B.A.) with a concentration in politics and government

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Assumptions, methods and analytical tools  
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues  
Students will demonstrate knowledge of current political and policy issues.
3. Theory and principles of four subfields  
Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.
4. Advanced understanding of one subfield  
Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.
5. Expository and analytic writing  
Students will demonstrate skill in expository and analytic writing in the political science discipline
6. Political behavior  
Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

## Honors in political science

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 with an A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

## Special requirements

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of six internship and three independent study credits toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

## Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in politics and government

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4

Approved social/behavioral sciences	3-4
Total Hours	21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Foreign language (201-level)	3
Foreign language (202-level)	3
Total Hours	6

#### Major requirements

POLI 103	U.S. Government (meets approved H&S human, social and political behavior requirement)	3
POLI/INTL 105	International Relations (meets approved H&S diverse and global communities requirement)	3
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
POLI 490	Senior Seminar	3
Select POLI electives from the 300- and 400-level POLI offerings		18
Total Hours		33

#### Open electives

Select 35-49 open elective credits	35-49
------------------------------------	-------

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester	Hours
POLI 103 U.S. Government	3
UNIV 101 Introduction to the University	1
UNIV 111 Focused Inquiry I	3
Approved quantitative literacy	3
Foreign language (101-level)	4
Term Hours:	14

**Spring semester**

HUMS 202	Choices in a Consumer Society	1
POLI 105 or INTL 105	International Relations or International Relations	3
UNIV 112	Focused Inquiry II	3
Approved natural/physical sciences		3-4
Foreign language (102-level)		4
Term Hours:		14-15

**Sophomore year****Fall semester**

POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S literature and civilization		3
Foreign language (201-level)		3
Term Hours:		15

**Spring semester**

POLI electives		6
Experiential fine arts (course offered by the School of the Arts)		1-3
Foreign language (202-level)		3
Open electives		4
Term Hours:		14-16

**Junior year****Fall semester**

POLI elective		3
Approved H&S General Education electives		3-4
Open electives		9
Term Hours:		15-16

**Spring semester**

POLI elective		3
Approved H&S General Education electives		3-4
Open electives		9
Term Hours:		15-16

**Senior year****Fall semester**

POLI 490	Senior Seminar	3
POLI elective		3
Open electives		12
Term Hours:		18

**Spring semester**

POLI elective		3
Open electives		12
Term Hours:		15
Total Hours:		120-125

## Political Science, Bachelor of Arts (B.A.) with a concentration in public policy and administration

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

### Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

1. Assumptions, methods and analytical tools  
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues  
Students will demonstrate knowledge of current political and policy issues.
3. Theory and principles of four subfields  
Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.
4. Advanced understanding of one subfield  
Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.
5. Expository and analytic writing  
Students will demonstrate skill in expository and analytic writing in the political science discipline
6. Political behavior  
Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

### Honors in political science

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 with an A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

### Special requirements

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of six internship and three independent study credits toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

## Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in public policy and administration

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Foreign language (201-level)	3
Foreign language (202-level)	3
Total Hours	6

### Major requirements

POLI 103	U.S. Government (meets approved H&S human, social and political behavior requirement)	3
POLI/INTL 105	International Relations (meets approved H&S diverse and global communities requirement)	3
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
POLI 310 or POLI 331	Public Policy Public Administration	3
POLI 490	Senior Seminar	3
Select POLI electives		6

Select three concentration electives from the list below	3
Total Hours	27

#### Open electives

Select 35-49 open elective credits	35-49
------------------------------------	-------

### Total minimum requirement 120 credits

#### Electives

Select three public policy and administration concentration electives from the following:

POLI 306	The Congress
POLI 308	U.S. Presidency
POLI 309	Bureaucratic Politics
POLI 310	Public Policy
POLI/ENVS 311	Politics of the Environment
POLI 315	Courts and Politics
POLI 321	City Politics
POLI 322	State and Local Government and Politics
POLI 323	Virginia Government and Politics
POLI 329	Intergovernmental Relations
POLI 331	Public Administration
POLI 370	Nonprofit Organizations and Society
POLI 372	Ethics, Law and Governance
POLI 374	Financial Management for Nonprofits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester	Hours
POLI 103 U.S. Government	3
UNIV 101 Introduction to the University	1
UNIV 111 Focused Inquiry I	3
Approved quantitative literacy	3
Foreign language (101-level)	4
Term Hours:	14

#### Spring semester

HUMS 202 Choices in a Consumer Society	1
POLI 105 International Relations or INTL or International Relations 105	3
UNIV 112 Focused Inquiry II	3
Approved natural/physical sciences	3-4
Foreign language (102-level)	4
Term Hours:	14-15

#### Sophomore year

Fall semester	Hours
POLI 107 Political Theory	3
POLI 109 Comparative Politics	3
UNIV 200 Inquiry and the Craft of Argument	3
Approved H&S literature and civilization	3
Foreign language (201-level)	3
Term Hours:	15

**Spring semester**

POLI 310	Public Policy	3
or POLI 331	or Public Administration	
Concentration electives		3
Experiential fine arts		1-3
Foreign language (102-level)		3
Open electives		4
Term Hours:		14-16

**Junior year****Fall semester**

POLI elective		3
Approved H&S General Education electives		3-4
Open electives		9
Term Hours:		15-16

**Spring semester**

Approved H&S General Education electives		3-4
Concentration elective		3
Open electives		9
Term Hours:		15-16

**Senior year****Fall semester**

POLI 490	Senior Seminar	3
Concentration elective		3
Open electives		12
Term Hours:		18

**Spring semester**

POLI electives		3
Open electives		12
Term Hours:		15
Total Hours:		120-125

Students will demonstrate knowledge of current political and policy issues.

## 3. Theory and principles of four subfields

Students will demonstrate an understanding of basic theory and conceptual principles of political science in the four subfields of American government, political theory, international relations and comparative politics.

## 4. Advanced understanding of one subfield

Students will demonstrate an advanced understanding of current theoretical and empirical study in one subfield.

## 5. Expository and analytic writing

Students will demonstrate skill in expository and analytic writing in the political science discipline

## 6. Political behavior

Students will demonstrate knowledge of the ways in which individuals, national governmental organizations, political movements and parties, nation-states, and intergovernmental institutions work to achieve their political objectives.

**Honors in political science**

Political science majors can earn honors in political science. Students earn honors status when they complete POLI 490 Senior Seminar with an A grade and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

**Special requirements**

To graduate with a Bachelor of Arts in Political Science, students must complete 45 upper-level credits (including upper-level course work in the major) and maintain a cumulative and major GPA of 2.0. Students may count a maximum of nine credits from internships, mentorships or independent studies toward the major. Students may also apply three credits from courses in other departments toward the major with prior approval from the department chair.

**Degree requirements for Political Science, Bachelor of Arts (B.A.) with a concentration in U.S. government****General Education requirements****University Core Education Curriculum (minimum 21 credits)**

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

**Additional College of Humanities and Sciences requirements (11-23 credits)**

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3

**Political Science, Bachelor of Arts (B.A.) with a concentration in U.S. government**

The Department of Political Science offers a Bachelor of Arts in Political Science as well as elective courses in political science for program majors and non-majors.

The political science curriculum has two central objectives. It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process and government. It also provides a sound foundation for graduate study in political science, public administration and nonprofit management, or for careers that require knowledge of governance and the political process, such as law.

**Learning outcomes**

Upon completing this program, students will know and know how to do the following:

1. Assumptions, methods and analytical tools  
Students will demonstrate knowledge of the assumptions, methods and analytical tools of the discipline of political science.
2. Current political and policy issues



Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)	
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
<b>Total Hours</b>	<b>11-23</b>

<sup>1</sup> Course offered by the School of the Arts

## Collateral requirements

Foreign language (201-level)	3
Foreign language (202-level)	3
<b>Total Hours</b>	<b>6</b>

## Major requirements

POLI 103	U.S. Government	3
POLI/INTL 105	International Relations	3
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
POLI 490	Senior Seminar	3
POLI electives		6
Concentration electives (Choose four from list below)		12
<b>Total Hours</b>		<b>33</b>

## Open electives

Select 35-49 credits of open electives	35-49
--	-------

## Total minimum requirement 120

### Electives

POLI 301	U.S. Parties and Elections	3
POLI/AFAM 302	Politics of the Civil Rights Movement	3
POLI 303	Public Opinion, Polling and the Media	3
POLI 306	The Congress	3
POLI 308	U.S. Presidency	3
POLI 309	Bureaucratic Politics	3
POLI 310	Public Policy	3
POLI/ENVS 311	Politics of the Environment	3
POLI 314	U.S. Constitutional Law	3
POLI 315	Courts and Politics	3
POLI 316	Women and the Law	3
POLI/AFAM/GSWS 318	Politics of Race, Class and Gender	3
POLI/GSWS 319	Women and American Politics	3
POLI 320	Research Methods in the Social Sciences	3
POLI 321	City Politics	3
POLI 322	State and Local Government and Politics	3
POLI 323	Virginia Government and Politics	3

POLI 329	Intergovernmental Relations	3
POLI 331	Public Administration	3
POLI/AFAM 345	African-American Politics	3
POLI/INTL 364	Vietnam	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
POLI 103	U.S. Government	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved quantitative literacy		3
Foreign language (101-level)		4
Term Hours:		14

### Spring semester

HUMS 202	Choices in a Consumer Society	1
POLI 105 or INTL 105	International Relations or International Relations	3
UNIV 112	Focused Inquiry II	3
Approved natural/physical sciences		3-4
Foreign language (102-level)		4
Term Hours:		14-15

### Sophomore year

Fall semester		
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S literature and civilization		3
Foreign language (201-level)		3
Term Hours:		15

### Spring semester

Concentration electives		6
Experiential fine arts		1-3
Foreign language (202-level)		3
Open electives		4
Term Hours:		14-16

### Junior year

Fall semester		
POLI elective		3
Approved H&S General Education electives		3-4
Open electives		9
Term Hours:		15-16

### Spring semester

Approved H&S General Education electives		3-4
Concentration elective		3
Open electives		9
Term Hours:		15-16

### Senior year

#### Fall semester

POLI 490	Senior Seminar	3
	Concentration elective	3
	Open electives	12
Term Hours:		18
<b>Spring semester</b>		
	POLI elective	3
	Open electives	12
Term Hours:		15
Total Hours:		120-125

## Accelerated Bachelor of Arts (B.A.) in Political Science and Master of Public Administration (M.P.A.)

This program permits selected students to earn the B.A. and M.P.A. in a minimum of five years, by taking certain master's-level courses during the senior year of their undergraduate program. The program is restricted to students with strong credentials and a clear interest in a career in the public or nonprofit sector. To be eligible, a student must have completed 90 credits of course work and have an overall GPA of 3.0, with a GPA of 3.3 in political science courses. The accelerated program is limited to students majoring in political science who have a minimum of nine credit hours in political science courses.

To be considered for acceptance into the program and before enrolling in 600-level Master of Public Administration courses, a student must complete the graduate school application, submit standardized test scores and supply the supporting information required for admission. Upon being accepted into the accelerated program, a student must meet the same standards of performance as a graduate student that are described in detail in the "Satisfactory Progress" section of the Graduate Bulletin, must maintain a 3.0 GPA and must satisfactorily complete all of the requirements for the degree, as stated in this bulletin. Guidance to students admitted to the accelerated program is given by the public administration program director. Students should contact the M.P.A. graduate director for more information about admission procedures.

To graduate with a bachelor's degree, a student must complete 120 hours of course work. Of these credits, 33 must be in political science. Of the 33 political science credits, the following 15 are required:

POLI 103	U.S. Government	3
POLI/INTL 105	International Relations	3
POLI 107	Political Theory	3
POLI 109	Comparative Politics	3
POLI 490	Senior Seminar	3
Total Hours		15

Students enrolled in the accelerated program may take up to six credits of graduate public administration courses in each of the final two semesters of their undergraduate course work. These courses are shared credits with the graduate program, meaning that they will be applied toward the undergraduate degree requirement and the graduate degree requirement. A maximum of 12 credits may be taken prior to the completion of the baccalaureate degree. The Bachelor of Arts degree will be awarded when the student has completed all the requirements for the undergraduate degree, which may include the 12 graduate public administration credits.

The graduate courses that may be taken in the public administration program once a student is admitted to the accelerated program are as follows:

PADM/GVPA 601	Principles of Public Administration (may be used to meet the undergraduate major distribution requirement for U.S. politics and is a required course in the graduate program)	3
PADM 602	Public Administration Theory (may be used to meet the undergraduate major distribution requirement for political theory and methodology, and is a required course in the graduate program)	3
PADM 607	Public Human Resource Management (core requirement for the M.P.A.; elective for the undergraduate major)	3
PADM 609	Financial Management in Government (core requirement for the M.P.A.; elective for the undergraduate major)	3
PADM/GVPA/CRJS/URSP 623	Research Methods for Government and Public Affairs (may be used to meet the undergraduate major distribution requirement for political theory and methodology, and is a required course in the graduate program)	3
Select one of the following:		3
PADM 624	Quantitative Methods for Public Administration (core requirement for the public administration degree; elective for the undergraduate major)	
Or a PADM elective course (elective requirement for the M.P.A. and elective for the undergraduate major)		
PADM 650	Principles of Nonprofit Management (required for the concentration in nonprofit management and is an elective for the M.P.A. degree, and may fulfill an elective requirement in the undergraduate major)	3

All accelerated program students must have their course schedules approved by the graduate public administration program director prior to registration.

## Nonprofit management and administration, minor in

The minor in nonprofit management and administration is designed to introduce students to the history and current profile of American and international nonprofit and nongovernmental organizations as providers of public services and political actors in the national and international political environment. The minor also emphasizes basic knowledge and skills needed for professional work in the nonprofit sector as well as graduate study in public administration, law and public policy.

## Minor requirements

The minor consists of 18 credits. All students must take the following courses:

POLI 370	Nonprofit Organizations and Society	3
POLI 372	Ethics, Law and Governance	3
POLI 374	Financial Management for Nonprofits	3
Select three of the following courses as electives:		9
MASC 210	Public Relations	
MGMT 331	Human Resource Management	
POLI 320	Research Methods in the Social Sciences	
POLI 331	Public Administration	
POLI 493	Political Science Internship (see adviser)	
SLWK 230	Communication in the Helping Process	
SOCY 310	Social Movements and Social Conflict	
Total Hours		18

## Political science, minor in

A minor in political science consists of 18 credits, including:

POLI 103	U.S. Government	3
POLI/INTL 105	International Relations	3
Select at least three upper-level (300-400) credits in each of the following four main subfields of political science:		12
Comparative politics		
International relations		
Political theory and methodology		
U.S. government		
Total Hours		18

See political science adviser for list of courses in each area. POLI 492, POLI 493 and POLI 494 cannot be used to fulfill the 12 upper-level credits. Approved courses for each subfield corresponds to the concentration elective list of the same listed within the major requirements.

## Public management, minor in

A minor in public management is designed for students who wish to prepare for a variety of employment opportunities in government and related fields. It provides an overview of public affairs at the national, state and local levels. Its emphasis is on acquainting students with the political context of public administration, issues of particular importance in the private sector, and the complexity of planning and decision-making. By emphasizing both professional skill and analytical thinking, it offers the possibility to develop valuable workplace skills and analytical capabilities that may qualify graduates for professional opportunities with local, state or federal agencies, and an ultimate career in the public sector. A public management minor also is solid preparation for graduate study in law, public administration, public policy and political science. Students in the minor may arrange an internship to provide experience and practical exposure to public management.

## Minor requirements

The minor consists of 18 upper-level credits. All students must take the following courses:

POLI 310	Public Policy	3
POLI 322	State and Local Government and Politics	3
POLI 331	Public Administration	3
Select three of the following electives:		9
POLI 309	Bureaucratic Politics	
POLI 321	City Politics	
POLI 323	Virginia Government and Politics	
POLI 329	Intergovernmental Relations	
POLI 344	Contemporary Political Theory	
POLI 370	Nonprofit Organizations and Society	
POLI 493	Political Science Internship (see adviser)	
Total Hours		18

## Department of Psychology

**Wendy Kliewer, Ph.D.**

Professor and chair

**Michael Southam-Gerow, Ph.D.**

Professor and director of graduate studies

**Linda E. Zyzanski, Ph.D.**

Associate professor and director of undergraduate programs

**Dorothy E. Fillmore**

Associate director of academic operations

psychology.vcu.edu (<http://www.psychology.vcu.edu>)

In addition to the Bachelor of Science in Psychology, the Department of Psychology offers instruction in clinical, counseling, health and general psychology leading to the Doctor of Philosophy degree. Students in all doctoral degree programs are educated first as psychologists and then helped to develop competence in a more specialized area relevant to their scholarly and professional objectives. In addition, special training and experience in college teaching is available.

## Honors in psychology

Psychology majors in the baccalaureate program can earn honors in psychology. Any student is eligible to join the program if he or she declares a major in psychology, meets one of the three following entrance requirements and joins the Honors College.

Entering freshmen must have combined SAT scores of at least 1910 and rank in the top 15 percent of their high school graduating class and present an unweighted 3.5 GPA (4.0 scale). Students transferring to VCU must have a 3.5 cumulative GPA in at least 30 college semester hours of credit and have no more than 60 college semester hours of credit. Continuing VCU students must have a 3.5 cumulative GPA and have taken a minimum of 20, but no more than 60, credits at VCU.

Once admitted to the program, the honors student must complete an honors thesis during a three-semester course sequence (PSYC 497, 498,

499), typically begun in their junior year, in which they propose, conduct and successfully defend their research.

A student in the program will graduate with honors in psychology if he or she has completed this three-course sequence with an A in each course, has maintained a GPA of 3.5, overall and in psychology, has had their thesis defense approved by members of the committee with no more than one negative vote and has completed all other requirements for the Bachelor of Science in Psychology.

## Psychology advising (Psyugrad)

Students choose to major in psychology for many reasons. Most often they select the major from a combination of wanting to help other people and wanting to learn the scientific principles of behavior. Students in the program expect to receive career counseling and information on graduate and/or professional school training. The department has developed methods to meet these expectations.

Psyugrad has been established by the department to provide advising to undergraduate majors with educational and career planning. Students are shown how to choose appropriate electives for bachelor's-level careers in mental health services, personnel, management, corrections, rehabilitation, health services, education and laboratory research. In addition, all psychology majors are enrolled in PSYUGRAD, a Blackboard organization. PSYUGRAD provides up-to-date information on research opportunities, jobs, special presentations and advising documents.

The adviser's role is to consult with students about various areas of professional opportunity, explain the role of graduate education and suggest general areas of study outside of the psychology department that might fit the student's interests and goals. Advisers are available on a walk-in basis at the department's Psyugrad Advising Office located at the White House, 806 W. Franklin Street, Room 107. Hours are posted on PSYUGRAD Blackboard.

PSYC 492 and PSYC 494 are two of the upper-level electives specifically designed to enhance the psychology major's career pursuits for either employment or graduate-level training. Both of these courses provide opportunities for direct, practical experience with close supervision. Students may register for one, two or three credits following consultation with a faculty mentor who will supervise the experience. Students are expected to work three hours per week per credit hour for each of these experiences. They may be repeated for up to a total of 12 credits, but with no more than six credits of each.

The Department of Psychology offers service-learning courses (PSYC 307/LFSC 307; PSYC 493) that involve participation in an organized community service experience. Through classroom discussions and written assignments, students relate theories and research presented in class with community experiences. Through service-learning courses, students:

- Gain an understanding and appreciation of the community and its diverse people
- Explore an area of study or a career option
- Critically reflect on their values and responsibilities as citizens

In many cases, a service-learning course will meet the urban experience general education requirement (refer to the Schedule of Classes).

- Psychology, Bachelor of Science (B.S.) (p. 161)
- Psychology, Bachelor of Science (B.S.) with a concentration in:
  - Applied psychology (p. 163)

- Life science (p. 165)
- Pre-graduate school (p. 167)
- Urban psychology (p. 169)

- Psychology, minor in (p. 171)

## Psychology, Bachelor of Science (B.S.)

The Bachelor of Science in Psychology curriculum reflects the discipline's major functions — scientific research, teaching, acting as a healing profession and raising philosophical questions about the assumptions, values and ideals of human beings and their societies, which reflects psychology's origin in philosophy. Through a core set of requirements the student systematically develops understanding and skill in scientific methods of inquiry, focusing on the human mind and behavior. To fulfill the degree requirements, students may pursue the standard curriculum by selecting courses from four content areas that introduce students to the healing and philosophical sides of psychology and provide a broad understanding of the field as a whole; or the student may apply to one of several more focused concentrations that draw upon the special strengths of the VCU Department of Psychology.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

### • Understanding of content domain

The curriculum of the B.S. in Psychology is designed to provide students with an accurate, comprehensive and up-to-date understanding of psychological concepts, principles and findings in the key domains of the field, including developmental processes, social processes, physiological and behavioral processes, and mental health and well-being.

### • Development of intellectual domain

The curriculum of the B.S. in Psychology fosters the development of the intellectual skills required to generate theories, do research, communicate ideas and information to others, evaluate conclusions statistically and locate the information needed for these intellectual pursuits. Students will learn to think scientifically, understand the relationships between theories, observations and conclusions, and skillfully evaluate the empirical support for various theories and findings.

### • Development of affective and interpersonal domain

Students seeking the B.S. in Psychology learn a number of practical, applied life skills pertaining to personal adjustment, relations with others and cross-cultural awareness.

## Special requirements

The Bachelor of Science in Psychology curriculum requires a minimum of 120 credits, with at least 30 credits in psychology courses. A maximum of 40 credits in psychology (this limit does not apply to PSYC courses numbered 490 and above) can be presented for the degree. At least 15 of the 30 minimum-required credits must be completed at VCU. All students must complete the following:

### Psychology core requirements

PSYC 101	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3

### Collateral requirements

BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
Select one of the following:		3-4
BIOL 103	Environmental Science	
BIOL 201	Human Biology	
Or an approved biology course		
STAT 210	Basic Practice of Statistics	3

For the standard curriculum, students must complete the psychology core, PSYC 451, at least one course from each of the following four domains or content areas, and at least two psychology electives.

#### Developmental

PSYC 301	Child Psychology	3
PSYC 302	Psychology of Adolescence	3
PSYC 304	Life Span Developmental Psychology (cannot take both for credit toward a degree)	3
PSYC 306	Psychology of Adult Development	3
PSYC 307	Community Solutions: Multiple Perspectives	3
GRTY 510	Aging	3

#### Social/personality

PSYC 309	Personality	3
PSYC 321	Social Psychology	3
PSYC/AFAM 322	Personality and Behavior of the African American	3
PSYC 323	Interpersonal Relations	3
PSYC/RELS 333	Psychology and Religious Experience	3
PSYC/GSWs 335	Psychology of Women	3
PSYC/SOCY 341	Group Dynamics	3

#### Physiological/learning

PSYC 401	Physiological Psychology	3
PSYC 406	Perception	3
PSYC 410	Principles of Learning and Cognition	3

#### Self-development/applied psychology

PSYC 303	Personal Adjustment	3
PSYC 308	Stress and its Management	3
PSYC 310	Industrial Psychology	3
PSYC 318	Principles of Psychological Tests and Measurements	3
PSYC 340	Introduction to the Helping Relationship	3
PSYC 407	Psychology of the Abnormal	3
PSYC 412	Health Psychology	3
PSYC 426	Child Psychopathology	3

Core courses must be taken sequentially and ideally should be completed by the end of the junior year. Core courses are PSYC 101 with a minimum grade of C; PSYC 214 with a minimum grade of C (PSYC 214 also has the prerequisite requirement of STAT 210 or its equivalent with a minimum grade of C); and PSYC 317 with a minimum grade of C (PSYC 317 also has the prerequisite requirement of PSYC 214 or its equivalent with a minimum grade of C).

PSYC 451 is the capstone course and must be taken in the senior year.

Students must achieve a minimum cumulative VCU GPA of 2.0 and also achieve a minimum GPA of 2.0 in the major in order to graduate.

## Degree requirements for Psychology, Bachelor of Science (B.S.)

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
BIOL/ENVS 103 or BIOL 201	Environmental Science Human Biology	3-4
STAT 210	Basic Practice of Statistics	3
Total Hours		10-11

### Major requirements

PSYC 101	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3
PSYC 451	History of Psychology (capstone)	3
Select a course in developmental domain		3
Select a course in social/personality domain		3
Select a course in physiological/learning domain		3



Select a course in self-development/applied psychology domain	3
Psychology electives	6
<b>Total Hours</b>	<b>31</b>

## Open electives

Select 32-48 open elective credits 32-48

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
BIOL 101	Biological Concepts	4
& BIOZ 101	and Biological Concepts Laboratory	
PSYC 101	Introduction to Psychology (approved human, social and political behavior)	4
STAT 210	Basic Practice of Statistics (approved quantitative literacy and collateral)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Term Hours:		15

### Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Approved diverse and global communities		3
Approved General Education elective		3
Approved literature and civilization		3
Open elective		3
Term Hours:		16

### Sophomore year

Fall semester		Hours
BIOL 103 or BIOL 201	Environmental Science or Human Biology	3-4
HUMS 291	Special Topics in the Humanities and Sciences	1
PSYC 214	Applications of Statistics	3
UNIV 200	Inquiry and the Craft of Argument	3
Foreign language (101 level)		4
Term Hours:		14-15

### Spring semester

PSYC 317	Experimental Methods	3
Approved General Education elective		3
Experiential fine arts		1-3
Foreign language (102 level)		4
Open elective		2
Psychology elective (upper-level)		3
Term Hours:		16-18

### Junior year

Fall semester		Hours
Course in developmental domain		3

Course in social/personality domain	3
Open elective (upper-level)	3
Open electives (upper- or lower-level)	6
Term Hours:	15

### Spring semester

Course in physiological/learning domain	3
Course in self-development/applied psychology domain	3
Open elective (upper-level)	3
Open electives (upper- or lower-level)	6
Term Hours:	15

### Senior year

#### Fall semester

PSYC 451	History of Psychology	3
Psychology elective (upper-level)		3
Psychology elective or open electives (upper-level)		6
Open elective (upper- or lower-level)		3
Term Hours:		15

#### Spring semester

Psychology elective or open elective (upper-level)		3
Open electives (upper-level)		6
Open electives (upper- or lower-level)		5
Term Hours:		14

Total Hours: 120-123

## Psychology, Bachelor of Science (B.S.) with a concentration in applied psychology

The Bachelor of Science in Psychology curriculum reflects the discipline's major functions — scientific research, teaching, acting as a healing profession and raising philosophical questions about the assumptions, values and ideals of human beings and their societies, which reflects psychology's origin in philosophy. Through a core set of requirements the student systematically develops understanding and skill in scientific methods of inquiry, focusing on the human mind and behavior. To fulfill the degree requirements, students may pursue the standard curriculum by selecting courses from four content areas that introduce students to the healing and philosophical sides of psychology and provide a broad understanding of the field as a whole; or the student may apply to one of several more focused concentrations that draw upon the special strengths of the VCU Department of Psychology.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

### • Understanding of content domain

The curriculum of the B.S. in Psychology is designed to provide students with an accurate, comprehensive and up-to-date understanding of psychological concepts, principles and findings in the key domains of the field, including developmental processes, social processes, physiological and behavioral processes, and mental health and well-being.

### • Development of intellectual domain

The curriculum of the B.S. in Psychology fosters the development of the intellectual skills required to generate theories, do research,

communicate ideas and information to others, evaluate conclusions statistically and locate the information needed for these intellectual pursuits. Students will learn to think scientifically, understand the relationships between theories, observations and conclusions, and skillfully evaluate the empirical support for various theories and findings.

- **Development of affective and interpersonal domain**

Students seeking the B.S. in Psychology learn a number of practical, applied life skills pertaining to personal adjustment, relations with others and cross-cultural awareness.

## Special requirements

The Bachelor of Science in Psychology curriculum requires a minimum of 120 credits, with at least 30 credits in psychology courses. A maximum of 40 credits in psychology (this limit does not apply to PSYC courses numbered 490 and above) can be presented for the degree. At least 15 of the 30 minimum-required credits must be completed at VCU. All students must complete the following:

### Psychology core requirements

PSYC 101	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3

### Collateral requirements

BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
Select one of the following:		3-4
BIOL 103	Environmental Science	
BIOL 201	Human Biology	
Or an approved biology course		
STAT 210	Basic Practice of Statistics	3

This information outlines the requirements for students who are admitted and pursuing the applied psychology concentration. To be admitted, continue and graduate with this concentration, students must achieve a minimum cumulative VCU GPA of 2.5 and also achieve a minimum GPA of 2.5 in the major. This concentration requires 31 credit hours in the major.

Core courses must be taken sequentially and ideally should be completed by the end of the junior year. Core courses are PSYC with a minimum grade of C; PSYC 214 with a minimum grade of C (PSYC 214 also has the prerequisite requirement of STAT 210 or its equivalent with a minimum grade of C); and PSYC 317 with a minimum grade of C (PSYC 317 also has the prerequisite requirement of PSYC 214 or its equivalent with a minimum grade of C).

PSYC 451 is the capstone course and must be taken in the senior year.

## Degree requirements for Psychology, Bachelor of Science (B.S.) with a concentration in applied psychology

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
--	-------------------	---

UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
BIOL/ENVS 103 or BIOL 201	Environmental Science Human Biology	3-4
STAT 210	Basic Practice of Statistics	3
Total Hours		10-11

### Major requirements

PSYC 101	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3
PSYC 304	Life Span Developmental Psychology	3
PSYC 308	Stress and its Management	3
PSYC 309	Personality	3
PSYC 317	Experimental Methods	3
PSYC 318	Principles of Psychological Tests and Measurements	3
PSYC 340	Introduction to the Helping Relationship	3
PSYC 407	Psychology of the Abnormal	3
Select one of the following:		3
PSYC 492	Independent Study	
PSYC 493	Fieldwork: Human Services	
PSYC 494	Research Internship in Psychology	
Total Hours		31

## Capstone

PSYC 451	History of Psychology	3
----------	-----------------------	---

## Open electives

Select 29-44 open elective credits	29-44
------------------------------------	-------

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
BIOL 101	Biological Concepts	4
& BIOZ 101	and Biological Concepts Laboratory	
PSYC 101	Introduction to Psychology (approved human, social and political behavior)	4
STAT 210	Basic Practice of Statistics (approved quantitative literacy and collateral)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Term Hours:		15

### Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Approved diverse and global communities		3
Approved General Education elective		3
Approved literature and civilization		3
Open elective		3
Term Hours:		16

### Sophomore year

#### Fall semester

BIOL 103	Environmental Science	3-4
or ENVS 103	or Environmental Science or Human Biology	
or BIOL 201		
HUMS 291	Special Topics in the Humanities and Sciences	1
PSYC 214	Applications of Statistics	3
UNIV 200	Inquiry and the Craft of Argument	3
Foreign language (101 level)		4
Term Hours:		14-15

#### Spring semester

PSYC 304	Life Span Developmental Psychology	3
PSYC 317	Experimental Methods	3
Approved General Education elective		3
Experiential fine arts		1-3
Foreign language (102 level)		4
Open elective		2
Term Hours:		16-18

### Junior year

#### Fall semester

PSYC 308	Stress and its Management	3
----------	---------------------------	---

PSYC 309	Personality	3
Open elective (upper-level)		3
Open electives (upper- or lower-level)		6
Term Hours:		15

#### Spring semester

PSYC 318	Principles of Psychological Tests and Measurements	3
PSYC 340	Introduction to the Helping Relationship	3
Open elective (upper-level)		3
Open electives (upper- or lower-level)		6
Term Hours:		15

### Senior year

#### Fall semester

PSYC 407	Psychology of the Abnormal	3
PSYC 451	History of Psychology	3
PSYC 492	Independent Study	3
or PSYC 493	or Fieldwork: Human Services or Research Internship in Psychology	
or PSYC 494		
Open elective (upper- or lower-level)		3
Psychology elective or open elective (upper-level)		3
Term Hours:		15

#### Spring semester

Open electives (upper-level)		6
Open electives (upper- or lower-level)		5
Psychology elective or open elective (upper-level)		3
Term Hours:		14
Total Hours:		120-123

## Psychology, Bachelor of Science (B.S.) with a concentration in life science

The Bachelor of Science in Psychology curriculum reflects the discipline's major functions — scientific research, teaching, acting as a healing profession and raising philosophical questions about the assumptions, values and ideals of human beings and their societies, which reflects psychology's origin in philosophy. Through a core set of requirements the student systematically develops understanding and skill in scientific methods of inquiry, focusing on the human mind and behavior. To fulfill the degree requirements, students may pursue the standard curriculum by selecting courses from four content areas that introduce students to the healing and philosophical sides of psychology and provide a broad understanding of the field as a whole; or the student may apply to one of several more focused concentrations that draw upon the special strengths of the VCU Department of Psychology.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

### • Understanding of content domain

The curriculum of the B.S. in Psychology is designed to provide students with an accurate, comprehensive and up-to-date understanding of psychological concepts, principles and findings in the key domains of the field, including developmental processes,

social processes, physiological and behavioral processes, and mental health and well-being.

- **Development of intellectual domain**

The curriculum of the B.S. in Psychology fosters the development of the intellectual skills required to generate theories, do research, communicate ideas and information to others, evaluate conclusions statistically and locate the information needed for these intellectual pursuits. Students will learn to think scientifically, understand the relationships between theories, observations and conclusions, and skillfully evaluate the empirical support for various theories and findings.

- **Development of affective and interpersonal domain**

Students seeking the B.S. in Psychology learn a number of practical, applied life skills pertaining to personal adjustment, relations with others and cross-cultural awareness.

## Special requirements

The Bachelor of Science in Psychology curriculum requires a minimum of 120 credits, with at least 30 credits in psychology courses. A maximum of 40 credits in psychology (this limit does not apply to PSYC courses numbered 490 and above) can be presented for the degree. At least 15 of the 30 minimum-required credits must be completed at VCU. All students must complete the following:

### Psychology core requirements

PSYC 101	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3

### Collateral requirements

BIOL 101	Biological Concepts	4
& BIOZ 101	and Biological Concepts Laboratory	
Select one of the following:		3-4
BIOL 103	Environmental Science	
BIOL 201	Human Biology	
Or an approved biology course		
STAT 210	Basic Practice of Statistics	3

This information outlines the requirements for students who are admitted and pursuing the life science concentration. To be admitted, continue and graduate with this concentration, students must achieve a minimum cumulative VCU GPA of 2.5 and also achieve a minimum GPA of 2.5 in the major. This concentration requires 34 credit hours in the major.

Core courses must be taken sequentially and ideally should be completed by the end of the junior year. Core courses are PSYC 101 with a minimum grade of C; PSYC 214 with a minimum grade of C (PSYC 214 also has the prerequisite requirement of STAT 210 or its equivalent with a minimum grade of C); and PSYC 317 with a minimum grade of C (PSYC 317 also has the prerequisite requirement of PSYC 214 or its equivalent with a minimum grade of C).

PSYC 451 is the capstone course and must be taken in the senior year.

## Degree requirements for Psychology, Bachelor of Science (B.S.) with a concentration in life science

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

BIOL 101	Biological Concepts	4
& BIOZ 101	and Biological Concepts Laboratory	
BIOL/ENVS 103	Environmental Science <sup>1</sup>	4
or BIOL 201	Human Biology	
STAT 210	Basic Practice of Statistics	3
Total Hours		7

<sup>1</sup> BIOL 201 fulfills both collateral and concentration requirement.

### Major requirements

BIOL 201	Human Biology	3
BIOL 445	Neurobiology and Behavior	4
PHTX 400	Drugs and their Actions	3
PSYC 101	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3
PSYC 401	Physiological Psychology	3

PSYC 406	Perception	3
PSYC 410	Principles of Learning and Cognition	3
PSYC 412	Health Psychology	3
Select one of the following:		3
PSYC 492	Independent Study	
PSYC 493	Fieldwork: Human Services	
PSYC 494	Research Internship in Psychology	
Total Hours		35

## Capstone

PSYC 451	History of Psychology	3
----------	-----------------------	---

## Open electives

Select 29-43 open elective credits	29-43
------------------------------------	-------

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
PSYC 101	Introduction to Psychology (approved human, social and political behavior)	4
STAT 210	Basic Practice of Statistics (approved quantitative literacy and collateral)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Term Hours:		15

### Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Approved diverse and global communities		3
Approved General Education elective		3
Approved literature and civilization		3
Open elective		3
Term Hours:		16

### Sophomore year

Fall semester		Hours
BIOL 201	Human Biology (collateral and concentration requirement)	3
HUMS 291	Special Topics in the Humanities and Sciences	1
PSYC 214	Applications of Statistics	3
UNIV 200	Inquiry and the Craft of Argument	3
Foreign language (101 level)		4
Term Hours:		14

### Spring semester

PSYC 317	Experimental Methods	3
PSYC 401	Physiological Psychology	3
Approved General Education elective		3
Experiential fine arts		1-3

Foreign language (102 level)		4
Open elective		2
Term Hours:		16-18

### Junior year

#### Fall semester

PSYC 406	Perception	3
PSYC 410	Principles of Learning and Cognition	3
Open elective (upper-level)		3
Open electives (upper- or lower-level)		6
Term Hours:		15

#### Spring semester

BIOL 445	Neurobiology and Behavior	4
PSYC 412	Health Psychology	3
Open elective (upper-level)		3
Open electives (upper- or lower-level)		5
Term Hours:		15

### Senior year

#### Fall semester

PHTX 400	Drugs and their Actions	3
PSYC 451	History of Psychology	3
PSYC 492 or PSYC 493 or PSYC 494	Independent Study or Fieldwork: Human Services or Research Internship in Psychology	3
Open elective (upper- or lower-level)		3
Psychology elective or open elective (upper-level)		3
Term Hours:		15

#### Spring semester

Psychology elective or open elective (upper-level)		3
Open electives (upper-level)		6
Open electives (upper- or lower-level)		5
Term Hours:		14
Total Hours:		120-122

## Psychology, Bachelor of Science (B.S.) with a concentration in pre-graduate school

The Bachelor of Science in Psychology curriculum reflects the discipline's major functions — scientific research, teaching, acting as a healing profession and raising philosophical questions about the assumptions, values and ideals of human beings and their societies, which reflects psychology's origin in philosophy. Through a core set of requirements the student systematically develops understanding and skill in scientific methods of inquiry, focusing on the human mind and behavior. To fulfill the degree requirements, students may pursue the standard curriculum by selecting courses from four content areas that introduce students to the healing and philosophical sides of psychology and provide a broad understanding of the field as a whole; or the student may apply to one of several more focused concentrations that draw upon the special strengths of the VCU Department of Psychology.



## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- **Understanding of content domain**  
The curriculum of the B.S. in Psychology is designed to provide students with an accurate, comprehensive and up-to-date understanding of psychological concepts, principles and findings in the key domains of the field, including developmental processes, social processes, physiological and behavioral processes, and mental health and well-being.
- **Development of intellectual domain**  
The curriculum of the B.S. in Psychology fosters the development of the intellectual skills required to generate theories, do research, communicate ideas and information to others, evaluate conclusions statistically and locate the information needed for these intellectual pursuits. Students will learn to think scientifically, understand the relationships between theories, observations and conclusions, and skillfully evaluate the empirical support for various theories and findings.
- **Development of affective and interpersonal domain**  
Students seeking the B.S. in Psychology learn a number of practical, applied life skills pertaining to personal adjustment, relations with others and cross-cultural awareness.

## Special requirements

The Bachelor of Science in Psychology curriculum requires a minimum of 120 credits, with at least 30 credits in psychology courses. A maximum of 40 credits in psychology (this limit does not apply to PSYC courses numbered 490 and above) can be presented for the degree. At least 15 of the 30 minimum-required credits must be completed at VCU. All students must complete the following:

### Psychology core requirements

PSYC 101	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3

### Collateral requirements

BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
Select one of the following:		3-4
BIOL 103	Environmental Science	3
BIOL 201	Human Biology	
Or an approved biology course		
STAT 210	Basic Practice of Statistics	3

This information outlines the requirements for students who are admitted and pursuing the pre-graduate school concentration. To be admitted, continue and graduate with this concentration, students must achieve a minimum cumulative VCU GPA of 3.25 and also achieve a minimum GPA of 3.25 in the major. This concentration requires 34 credit hours in the major.

Core courses must be taken sequentially and ideally should be completed by the end of the junior year. Core courses are PSYC 101 with a minimum grade of C; PSYC 214 with a minimum grade of C (PSYC 214 also has the prerequisite requirement of STAT 210 or its equivalent with a minimum grade of C); and PSYC 317 with a minimum grade of C (PSYC

317 also has the prerequisite requirement of PSYC 214 or its equivalent with a minimum grade of C).

PSYC 451 is the capstone course and must be taken in the senior year.

## Degree requirements for Psychology, Bachelor of Science (B.S.) with a concentration in pre-graduate school

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	4
BIOL/ENVS 103 or BIOL 201	Environmental Science Human Biology	3-4
STAT 210	Basic Practice of Statistics	3
Total Hours		10-11

### Major requirements

PSYC 101	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3
PSYC 304	Life Span Developmental Psychology	3
PSYC 317	Experimental Methods	3

PSYC 318	Principles of Psychological Tests and Measurements	3
PSYC 321	Social Psychology	3
PSYC 401	Physiological Psychology	3
PSYC 407	Psychology of the Abnormal	3
PSYC 410	Principles of Learning and Cognition	3
PSYC 451	History of Psychology (capstone)	3
Select one of the following:		3
PSYC 492	Independent Study	
PSYC 493	Fieldwork: Human Services	
PSYC 494	Research Internship in Psychology	
Total Hours		34

## Open electives

Select 29-44 open elective credits 29-44

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
BIOL 101	Biological Concepts	4
& BIOZ 101	and Biological Concepts Laboratory	
PSYC 101	Introduction to Psychology (approved human, social and political behavior)	4
STAT 210	Basic Practice of Statistics (approved quantitative literacy and collateral)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Term Hours:		15

### Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Approved diverse and global communities		3
Approved General Education elective		3
Approved literature and civilization		3
Open elective		3
Term Hours:		16

### Sophomore year

Fall semester		
BIOL 103	Environmental Science	3-4
or ENVS 103	or Environmental Science	
or BIOL 201	or Human Biology	
HUMS 291	Special Topics in the Humanities and Sciences	1
PSYC 214	Applications of Statistics	3
UNIV 200	Inquiry and the Craft of Argument	3
Foreign language (101 level)		4
Term Hours:		14-15

### Spring semester

PSYC 304	Life Span Developmental Psychology	3
PSYC 317	Experimental Methods	3
Approved General Education elective		3
Experiential fine arts		1-3
Foreign language (102 level)		4
Open elective		2
Term Hours:		16-18

### Junior year

Fall semester		
PSYC 318	Principles of Psychological Tests and Measurements	3
PSYC 321	Social Psychology	3
Open elective (upper-level)		3
Open electives (upper- or lower-level)		6
Term Hours:		15

### Spring semester

PSYC 401	Physiological Psychology	3
PSYC 407	Psychology of the Abnormal	3
Open elective (upper-level)		3
Open electives (upper- or lower-level)		6
Term Hours:		15

### Senior year

Fall semester		
PSYC 410	Principles of Learning and Cognition	3
PSYC 451	History of Psychology	3
PSYC 492	Independent Study	3
or PSYC 493	or Fieldwork: Human Services	
or PSYC 494	or Research Internship in Psychology	
Open elective (upper- or lower-level)		3
Psychology elective or open elective (upper-level)		3
Term Hours:		15

### Spring semester

Open electives (upper-level)		6
Open electives (upper- or lower-level)		5
Psychology elective or open elective (upper-level)		3
Term Hours:		14
Total Hours:		120-123

## Psychology, Bachelor of Science (B.S.) with a concentration in urban psychology

The Bachelor of Science in Psychology curriculum reflects the discipline's major functions — scientific research, teaching, acting as a healing profession and raising philosophical questions about the assumptions, values and ideals of human beings and their societies, which reflects psychology's origin in philosophy. Through a core set of requirements the student systematically develops understanding and skill in scientific methods of inquiry, focusing on the human mind and behavior. To fulfill the degree requirements, students may pursue the standard curriculum by selecting courses from four content areas that introduce students to the healing and philosophical sides of psychology and provide a broad understanding of the field as a whole; or the student may apply to one

of several more focused concentrations that draw upon the special strengths of the VCU Department of Psychology.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- **Understanding of content domain**  
The curriculum of the B.S. in Psychology is designed to provide students with an accurate, comprehensive and up-to-date understanding of psychological concepts, principles and findings in the key domains of the field, including developmental processes, social processes, physiological and behavioral processes, and mental health and well-being.
- **Development of intellectual domain**  
The curriculum of the B.S. in Psychology fosters the development of the intellectual skills required to generate theories, do research, communicate ideas and information to others, evaluate conclusions statistically and locate the information needed for these intellectual pursuits. Students will learn to think scientifically, understand the relationships between theories, observations and conclusions, and skillfully evaluate the empirical support for various theories and findings.
- **Development of affective and interpersonal domain**  
Students seeking the B.S. in Psychology learn a number of practical, applied life skills pertaining to personal adjustment, relations with others and cross-cultural awareness.

## Special requirements

The Bachelor of Science in Psychology curriculum requires a minimum of 120 credits, with at least 30 credits in psychology courses. A maximum of 40 credits in psychology (this limit does not apply to PSYC courses numbered 490 and above) can be presented for the degree. At least 15 of the 30 minimum-required credits must be completed at VCU. All students must complete the following:

### Psychology core requirements

PSYC 101	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3
PSYC 317	Experimental Methods	3

### Collateral requirements

BIOL 101	Biological Concepts	4
& BIOZ 101	and Biological Concepts Laboratory	
Select one of the following:		3-4
BIOL 103	Environmental Science	
BIOL 201	Human Biology	
Or an approved biology course		
STAT 210	Basic Practice of Statistics	3

This information outlines the requirements for students who are admitted and pursuing the urban psychology concentration. To be admitted, continue and graduate with this concentration, students must achieve a minimum cumulative VCU GPA of 2.5 and also achieve a minimum GPA of 2.5 in the major. This concentration requires 34 credit hours in the major.

Core courses must be taken sequentially and ideally should be completed by the end of the junior year. Core courses are PSYC 101 with a minimum grade of C; PSYC 214 with a minimum grade of C (PSYC 214

also has the prerequisite requirement of STAT 210 or its equivalent with a minimum grade of C); and PSYC 317 with a minimum grade of C (PSYC 317 also has the prerequisite requirement of PSYC 214 or its equivalent with a minimum grade of C).

PSYC 451 is the capstone course and must be taken in the senior year.

## Degree requirements for Psychology, Bachelor of Science (B.S.) with a concentration in urban psychology

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

BIOL 101	Biological Concepts	4
& BIOZ 101	and Biological Concepts Laboratory	
BIOL/ENVS 103	Environmental Science	3-4
or BIOL 201	Human Biology	
STAT 210	Basic Practice of Statistics	3
Total Hours		10-11

### Major requirements

POLI 321	City Politics	3
PSYC 101	Introduction to Psychology	4
PSYC 214	Applications of Statistics	3

PSYC 302	Psychology of Adolescence	3
PSYC 304	Life Span Developmental Psychology	3
PSYC 317	Experimental Methods	3
PSYC/AFAM 322	Personality and Behavior of the African American	3
PSYC 340	Introduction to the Helping Relationship	3
PSYC 493	Fieldwork: Human Services	3
or PSYC 494	Research Internship in Psychology	
RELS 340/INTL 341	Global Ethics and the World's Religions	3
URSP 116	Introduction to the City	3
Total Hours		34

## Capstone

PSYC 451	History of Psychology	3
----------	-----------------------	---

## Open electives

Select 26-41 open elective credits	26-41
------------------------------------	-------

## Total minimum required 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
BIOL 101	Biological Concepts	4
& BIOZ 101	and Biological Concepts Laboratory	
PSYC 101	Introduction to Psychology (approved human, social and political behavior)	4
STAT 210	Basic Practice of Statistics (approved quantitative literacy and collateral)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Term Hours:		15

### Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Approved diverse and global communities		3
Approved General Education elective		3
Approved literature and civilization		3
Open elective		3
Term Hours:		16

### Sophomore year

Fall semester			
BIOL 103 or ENVS 103 or BIOL 201	Environmental Science or Environmental Science or Human Biology		3-4
HUMS 291	Special Topics in the Humanities and Sciences		1
PSYC 214	Applications of Statistics (successful completion, grade of C or better, of STAT 210 or its equivalent)		3

UNIV 200	Inquiry and the Craft of Argument	3
Foreign language (101 level)		4
Term Hours:		14-15

### Spring semester

PSYC 304	Life Span Developmental Psychology	3
PSYC 317	Experimental Methods	3
Approved General Education elective		3
Experiential fine arts		1-3
Foreign language (102 level)		4
Open elective		2
Term Hours:		16-18

### Junior year

#### Fall semester

PSYC 302	Psychology of Adolescence	3
PSYC 322	Personality and Behavior of the African American	3
Open elective (upper-level)		3
Open electives (upper- or lower-level)		6
Term Hours:		15

#### Spring semester

POLI 321	City Politics	3
PSYC 340	Introduction to the Helping Relationship	3
Open elective (upper-level)		3
Open electives (upper- or lower-level)		6
Term Hours:		15

### Senior year

#### Fall semester

RELS 340	Global Ethics and the World's Religions	3
PSYC 451	History of Psychology	3
PSYC 493	Fieldwork: Human Services	3
or PSYC 494	or Research Internship in Psychology	
URSP 116	Introduction to the City	3
Open elective (upper-level)		3
Term Hours:		15

#### Spring semester

Open electives (upper-level)		6
Open electives (upper- or lower-level)		5
Psychology elective or open elective (upper-level)		3
Term Hours:		14
Total Hours:		120-123

## Psychology, minor in

A minor in psychology consists of 18 credits in psychology, including:

PSYC 101	Introduction to Psychology	4
Select one course from each of the four basic areas:		11
Developmental		
Social/personality		
Physiological/learning		
Self-development/applied psychology		

Select one additional PSYC course <sup>1</sup>	3
Total Hours	18

<sup>1</sup> PSYC 201 cannot be used to meet this requirement.

At least nine of the 18 credits must be taken at VCU.

Department of Statistical Sciences and Operations Research

D’Arcy P. Mays III, Ph.D.  
Associate professor and chair

stat.vcu.edu (http://www.stat.vcu.edu)

The Department of Statistical Sciences and Operations Research offers programs leading to a Bachelor of Science in Mathematical Sciences, a Master of Science in Mathematical Sciences with a concentration in either operations research or statistics and a Doctor of Philosophy in Systems Modeling and Analysis. The curriculum of the programs is run jointly with the Department of Mathematics and Applied Mathematics (p. 121).

The department also offers a post-baccalaureate undergraduate certificate in statistics.

- Mathematics Sciences, Bachelor of Science (B.S.) with a concentration in:
  - Operations research (p. 172)
  - Statistics (p. 175)
- Statistics, minor in (p. 178)
- Statistics, Certificate in (Post-baccalaureate undergraduate certificate) (p. 177)

Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in operations research

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses and relationships to other disciplines. To this end, the scholarly growth of the faculty and students in the mathematical sciences is nurtured through study, research and a high standard of teaching. The curriculum provides a sound foundation for the student seeking to enter a career with a technological orientation or for the student who wishes to pursue graduate study in applied mathematics, biomathematics, mathematics, operations research, statistics, teaching mathematics in secondary schools or related fields.

A Bachelor of Science is offered jointly by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research. In the Department of Statistical Sciences and Operations Research, students pursuing the Bachelor of Science in Mathematical Sciences can choose a concentration of operations research, which focuses on modern mathematical techniques for solving problems arising from other fields, such as engineering, business or economics.

Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Apply theories of mathematical programming
- Perform stochastic models and decision analysis
- Obtain, analyze and interpret data
- Use commonly used operations research software
- Identify and apply operations research models
- Develop understanding of mathematics
- Communicate technical information orally and in writing

Special requirements

The B.S. in Mathematical Sciences requires a minimum of 120 credits. Along with the general education requirements of the College of Humanities and Sciences and the undergraduate degree requirements, students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151. No more than one course in mathematics (MATH) at the 100 level can count for the general requirements toward the degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

Double major

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. To initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

Second baccalaureate degree

For students possessing a bachelor’s degree and wishing to gain undergraduate preparation in an area of mathematical sciences, second baccalaureate degrees are offered through the department. For detailed information about these programs, refer to the “Academic regulations and general degree requirement” section of this bulletin

Degree requirements for Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in operations research

General Education requirements

University Core Education Curriculum (minimum 21 credits)			
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I		3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II		3
UNIV 200	Inquiry and the Craft of Argument		3
Approved humanities/fine arts			3
Approved natural/physical sciences			3-4
Approved quantitative literacy			3-4



Approved social/behavioral sciences	3-4
Total Hours	21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Select one of the following natural science sequences: 8-10

Sequence 1		
BIOL 151	Introduction to Biological Sciences I	
& BIOZ 151	and Introduction to Biological Science Laboratory I	
BIOL 152	Introduction to Biological Sciences II	
& BIOZ 152	and Introduction to Biological Science Laboratory II	
Sequence 2		
CHEM 101	General Chemistry	
& CHEZ 101	and General Chemistry Laboratory I	
CHEM 102	General Chemistry	
& CHEZ 102	and General Chemistry Laboratory II	
Sequence 3		
PHYS 201	General Physics	
& PHYS 202	and General Physics	
Sequence 4		
PHYS 207	University Physics I	
& PHYS 208	and University Physics II	
Select another course in the natural sciences that is not from the general education science and technology list. This course must be in a science different from the sequence chosen above.		3-5
Total Hours		11-15

### Major requirements

MATH 200	Calculus with Analytic Geometry	8
& MATH 201	and Calculus with Analytic Geometry <sup>1</sup>	
MATH 300	Introduction to Mathematical Reasoning <sup>1</sup>	3
MATH 307	Multivariate Calculus	4
MATH/STAT 309	<sup>1</sup>	3
MATH 310	Linear Algebra	3
MATH/OPER 327	<sup>1</sup>	3

OPER 427	Deterministic Operations Research <sup>1</sup>	3
OPER 428	Stochastic Operations Research <sup>1</sup>	3
SSOR 490	Developing Professional Skills in Operations Research and Statistics (capstone) <sup>1</sup>	3
STAT 212	Concepts of Statistics (fulfills University Core quantitative literacy)	3
STAT 403	Introduction to Stochastic Processes <sup>1</sup>	3
Select one of the following advanced mathematical science electives:		3
MATH 407	Advanced Calculus <sup>1</sup>	
MATH 501	Introduction to Abstract Algebra <sup>1</sup>	
MATH 509	General Topology I-II <sup>1</sup>	
Select one of the following computing sequences:		6-7
CMSC 245	Introduction to Programming Using C++	
& CMSC 246	and Advanced Programming Using C++	
CMSC 255	Introduction to Programming and Data Structures and Object Oriented Programming	
& CMSC 256		
EGRE 245	Engineering Programming Using C	
& EGRE 246	and Advanced Engineering Programming Using C++	
Select three courses from the operations research concentration electives below		9-12
Total Hours		54-58

<sup>1</sup> A minimum grade of C is required in these courses/credits.

### Open electives

Select two to 23 open elective credits 2-23

### Total minimum requirement 120 credits

#### Electives

For the operations research concentration, three electives must be chosen from the following list:

CMSC 302	Introduction to Discrete Structures	3
CMSC 303	Introduction to the Theory of Computation	3
CMSC 391	Topics in Computer Science <sup>2</sup>	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
INFO 364	Database Systems	3
MATH 301	Differential Equations	3
MATH 305	Elementary Number Theory	3
MATH/BNFO/BIOL 380	Introduction to Mathematical Biology	4
MATH 391	Topics in Mathematics <sup>2</sup>	1-3
MATH 407	Advanced Calculus	3
MATH 501	Introduction to Abstract Algebra	3
MATH 507	Bridge to Modern Analysis	3
MATH 508	Analysis II	3
MATH 509	General Topology I-II	3
MATH 510	General Topology I-II	3
MATH 511	Applied Linear Algebra	3
MATH 512	Complex Analysis for Applications	3

MATH 515	Numerical Analysis	3
MATH 517	Methods of Applied Mathematics	3
MATH 518	Methods of Applied Mathematics	3
MATH/OPER 520	Game Theory and Linear Programming	3
MATH 525	Introduction to Combinatorial Mathematics	3
MATH 532	Ordinary Differential Equations I	3
MATH 533	Partial Differential Equations I	3
MATH 534	Applied Discrete Dynamical Systems	3
OPER 591	Topics in Operations Research <sup>2</sup>	1-3
SSOR 492	Independent Study <sup>2</sup>	2-4
STAT 310	Introduction to Statistical Inference	3
STAT 314	Applications of Statistics <sup>3</sup>	4
STAT 321	Introduction to Statistical Computing	3
STAT 391	Topics in Statistics <sup>2</sup>	3
STAT 421	Applied Statistical Computing Using R	3
STAT 422	Structured Problem Solving Using Statistics	3
STAT 435	Industrial Statistics	3
STAT 441	Applied Statistics for Engineers and Scientists	3
STAT/BIOS 513	Mathematical Statistics I	3
STAT/BIOS 514	Mathematical Statistics II	3
STAT/BIOS 544	Statistical Methods II	3
STAT 546	Linear Models	3
STAT 591	Topics in Statistics <sup>2</sup>	3

<sup>2</sup> Special topics and independent study courses require prior approval from the department chair or the student's adviser.

<sup>3</sup> Students may not choose both STAT 314 and STAT 441.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
MATH 200	Calculus with Analytic Geometry	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved H&S diverse and global communities		3
Approved H&S general education elective		3-4
Term Hours:		14-15

#### Spring semester

HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry	4
STAT 212	Concepts of Statistics	3
UNIV 112	Focused Inquiry II	3
Approved H&S human, social and political behavior		3-4
Term Hours:		14-15

#### Sophomore year

Fall semester		
MATH 300	Introduction to Mathematical Reasoning	3

MATH 327		3
or OPER 327		
UNIV 200	Inquiry and the Craft of Argument	3
Foreign language 101		4
Computing sequence: Select one of the following:		
CMSC 245	Introduction to Programming Using C++	3-4
or CMSC 255	or Introduction to Programming	
or EGRE 245	or Engineering Programming Using C	
Term Hours:		16-17

#### Spring semester

MATH 307	Multivariate Calculus	4
MATH 310	Linear Algebra	3
Approved H&S science and technology		3-4
Foreign language 102		4
Computing sequence: Select one of the following with appropriate matching course from previous semester:		
CMSC 246	Advanced Programming Using C++	3
or CMSC 256	or Data Structures and Object Oriented Programming	
or EGRE 246	or Advanced Engineering Programming Using C++	
Term Hours:		17-18

#### Junior year

##### Fall semester

MATH 309		3
or STAT 309		
Approved H&S general education elective		3-4
Experiential fine arts		1-3
Operations research concentration elective (listed below)		3-4
Natural sciences sequence: Select one of the following:		4-5
BIOL 151	Introduction to Biological Sciences I	4
& BIOZ 151	and Introduction to Biological Science Laboratory I	
CHEM 101	General Chemistry	4
& CHEZ 101	and General Chemistry Laboratory I	
PHYS 201	General Physics	4
PHYS 207	University Physics I	5
Term Hours:		14-19

##### Spring semester

STAT 403	Introduction to Stochastic Processes	3
Approved H&S literature and civilization		3
Natural sciences elective (not from general education science and technology list and different science than chosen for sequence)		3-5
Operations research concentration elective (listed below)		3-4
Natural sciences sequence: Select one of the following with appropriate matching course from previous semester:		4-5
BIOL 152	Introduction to Biological Sciences II	4
& BIOZ 152	and Introduction to Biological Science Laboratory II	

CHEM 102	General Chemistry	4
& CHEZ 102	and General Chemistry Laboratory II	
PHYS 202	General Physics	4
PHYS 208	University Physics II	5
Term Hours:		16-20

**Senior year****Fall semester**

MATH 501	Introduction to Abstract Algebra	3
or MATH 407	or Advanced Calculus	
or MATH 509	or General Topology I-II	
OPER 427	Deterministic Operations Research	3
OPER 428	Stochastic Operations Research	3
Open electives		6
Term Hours:		15

**Spring semester**

SSOR 490	Developing Professional Skills in Operations Research and Statistics	3
Operations research concentration elective (listed below)		3-4
Open electives		8-9
Term Hours:		14-16
Total Hours:		120-135

## Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in statistics

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses and relationships to other disciplines. To this end, the scholarly growth of the faculty and students in the mathematical sciences is nurtured through study, research and a high standard of teaching. The curriculum provides a sound foundation for the student seeking to enter a career with a technological orientation or for the student who wishes to pursue graduate study in applied mathematics, biomathematics, mathematics, operations research, statistics, teaching mathematics in secondary schools or related fields.

A Bachelor of Science is offered jointly by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research. In the Department of Statistical Sciences and Operations Research, students pursuing the Bachelor of Science in Mathematical Sciences can choose a concentration of statistics, which teaches students how mathematical models used in the investigation of uncertain phenomena are developed and applied to experimental and nonexperimental data.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Understand basic statistical concepts and terms
- Perform data collection
- Analyze data
- Use statistical software packages

- Understand probability and inference
- Understand calculus and linear algebra
- Communicate results in writings and orally
- Use general linear model

### Special requirements

The B.S. in Mathematical Sciences requires a minimum of 120 credits. Along with the general education requirements of the College of Humanities and Sciences and the undergraduate degree requirements, students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151. No more than one course in mathematics (MATH) at the 100 level can count for the general requirements toward the degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

### Double major

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. To initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

### Second baccalaureate degree

For students possessing a bachelor's degree and wishing to gain undergraduate preparation in an area of mathematical sciences, second baccalaureate degrees are offered through the department. For detailed information about these programs, refer to the "Academic regulations and general degree requirement" section of this bulletin

## Degree requirements for Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in statistics

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		

Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
<b>Total Hours</b>	<b>11-23</b>

<sup>1</sup> Course offered by the School of the Arts

## Collateral requirements

Select one of the following natural science sequences:	8-10
<b>Sequence 1</b>	
BIOL 151 Introduction to Biological Sciences I & BIOZ 151 and Introduction to Biological Science Laboratory I	
BIOL 152 Introduction to Biological Sciences II & BIOZ 152 and Introduction to Biological Science Laboratory II	
<b>Sequence 2</b>	
CHEM 101 General Chemistry & CHEZ 101 and General Chemistry Laboratory I	
CHEM 102 General Chemistry & CHEZ 102 and General Chemistry Laboratory II	
<b>Sequence 3</b>	
PHYS 201 General Physics & PHYS 202 and General Physics	
<b>Sequence 4</b>	
PHYS 207 University Physics I & PHYS 208 and University Physics II	
Select another course in the natural sciences that is not from the general education science and technology list. This course must be in a science different from the sequence chosen above.	3-5
<b>Total Hours</b>	<b>11-15</b>

## Major requirements

MATH 200 Calculus with Analytic Geometry & MATH 201 and Calculus with Analytic Geometry <sup>1</sup>	8
MATH 211 Mathematical Structures <sup>1</sup> or MATH 300 Introduction to Mathematical Reasoning	3
MATH 307 Multivariate Calculus	4
MATH 310 Linear Algebra	3
SSOR 490 Developing Professional Skills in Operations Research and Statistics (capstone) <sup>1</sup>	3
STAT 212 Concepts of Statistics (fulfills University Core quantitative literacy)	3
STAT 305 Intermediate Statistics	3
STAT/MATH 309 Introduction to Probability Theory	3
STAT 310 Introduction to Statistical Inference	3
STAT 321 Introduction to Statistical Computing	3

Select statistics concentration electives to complete major requirement (listed below)	18
<b>Total Hours</b>	<b>51</b>

<sup>1</sup> A minimum grade of C is required in these courses/credits.

## Open electives

Select seven to 26 open elective credits	8-26
--	------

## Total minimum requirement 120 credits

### Electives

For the statistics concentration, six electives (18 credits) must be chosen from the following list:

SSOR 493	Internship	3
STAT 403	Introduction to Stochastic Processes	3
STAT 415	Statistical Consulting	3
STAT 421	Applied Statistical Computing Using R	3
STAT 423	Nonparametric Statistics	3
STAT 425	Multivariate Statistics	3
STAT 435	Industrial Statistics	3
STAT 443	Regression	3
STAT 475	Time Series <sup>1</sup>	3

<sup>1</sup> A minimum grade of C is required in this course.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
MATH 200	Calculus with Analytic Geometry	4
STAT 212	Concepts of Statistics	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved H&S general education elective		3-4
<b>Term Hours:</b>		<b>14-15</b>

### Spring semester

HUMS 202	Choices in a Consumer Society	1
MATH 201	Calculus with Analytic Geometry	4
MATH 211	Mathematical Structures	3
UNIV 112	Focused Inquiry II	3
Approved H&S human, social and political behavior		3-4
<b>Term Hours:</b>		<b>14-15</b>

### Sophomore year

Fall semester		
MATH 307	Multivariate Calculus	4
STAT 305	Intermediate Statistics	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S diverse and global communities		3
Foreign language 101		4
<b>Term Hours:</b>		<b>17</b>

### Spring semester

MATH 310	Linear Algebra	3
----------	----------------	---

STAT 321	Introduction to Statistical Computing	3
Approved H&S literature and civilization		3
Approved H&S science and technology		3-4
Foreign language 102		4

Term Hours: 16-17

#### Junior year

##### Fall semester

MATH 309 or STAT 309		3
Approved H&S general education elective		3-4
Experiential fine arts		1-3
Statistics concentration elective (see list)		3
Natural sciences sequence: Select one of the following:		4-5
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
PHYS 201	General Physics	4
PHYS 207	University Physics I	5

Term Hours: 14-18

##### Spring semester

STAT 310	Introduction to Statistical Inference	3
Open elective		3
Natural sciences sequence: Select one of the following with appropriate matching course from previous semester:		4-5
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
PHYS 202	General Physics	4
PHYS 208	University Physics II	5
Statistics concentration elective (see list)		6

Term Hours: 16-17

#### Senior year

##### Fall semester

Natural sciences elective (not from general education science and technology list and different science than chosen for sequence)		3-5
Open electives		6
Statistics concentration elective (see list)		6

Term Hours: 15-17

##### Spring semester

SSOR 490	Developing Professional Skills in Operations Research and Statistics	3
Open electives		8
Statistics concentration elective (see list)		3

Term Hours: 14

Total Hours: 120-130

## Statistics, Certificate in (Post-baccalaureate undergraduate certificate)

The Certificate in Statistics is open to students who have received bachelor's degrees in other areas. The primary goal of the program is to allow students with undergraduate majors in science, engineering and the social sciences an opportunity to acquire the formal training in statistics that is currently in demand in industry and government. Some students also may find the program a useful way to prepare for graduate study in statistics.

To be admitted to the program, a student must complete a baccalaureate degree. A student with limited college mathematics experience must take the Mathematics Placement Test before entering the program. Application materials and further information may be obtained by calling (804) 828-0001 or TDD (804) 828-0100, or by writing to the following address: Virginia Commonwealth University, Department of Statistical Sciences and Operations Research, Post-baccalaureate Certificate in Statistics, P.O. Box 843083, Richmond, VA 23284-3083.

The certificate program in statistics requires completion of a minimum of 32 approved credits at the 200 level or higher in mathematical sciences or related areas. A maximum of 14 credits toward certification may be transferred from course work completed before or after receiving a bachelor's degree. At least 18 approved credits must be from courses in statistics and probability at the 300 level or higher and must be taken at VCU. No more than six of these 18 credits can be from courses taken before admission to the certificate program. The student must achieve a minimum GPA (on courses taken at VCU) of 2.5 with no grade below C. All requirements for the certificate must be completed within five years of admission to the program.

The following courses are required:

CMSC 245	Introduction to Programming Using C++ (or equivalent)	3
or CMSC 255	Introduction to Programming	
MATH 200 & MATH 201	Calculus with Analytic Geometry and Calculus with Analytic Geometry (or equivalent)	8
MATH/STAT 309		3
STAT 210	Basic Practice of Statistics (or equivalent)	3
STAT 310	Introduction to Statistical Inference	3
STAT 314	Applications of Statistics	4
STAT/BIOS 544	Statistical Methods II	3
Approved credits at the 200-level or higher in mathematical sciences or related areas		5
Total Hours		32

Students will work closely with the program coordinator in selecting appropriate elective courses. While some students may have the background necessary for a 600-level graduate course, it is expected that most elective courses will be drawn from the 300- to 500-level statistics course offerings of the department. Statistics courses taught in other units of the university may be credited toward the certificate with the permission of the program coordinator.



## Statistics, minor in

A minor in statistics consists of at least 18 credits offered by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research. These credits include:

Select a minimum of three credits of calculus	3
Select nine upper-level credits in statistics courses	9
Select six additional credits offered by the Department of Mathematics and Applied Mathematics and the Department of Statistical Sciences and Operations Research	6
<b>Total Hours</b>	<b>18</b>

It is strongly recommended, though not required, that students with a minor in statistics take MATH 211 and STAT 212. The required credits may not be fulfilled with any of STAT 206, STAT 208, STAT 210 or any 100-level course.

A minimum GPA of 2.0 must be achieved in the minor.

Mathematical sciences majors cannot minor in statistics.

## Department of Sociology

**Jennifer Johnson, Ph.D.**

Associate professor and chair

sociology.vcu.edu (<http://www.sociology.vcu.edu>)

The sociology department at VCU provides an engaged, learner-centered experience for our undergraduate and graduate students through active involvement in faculty research and community development. Through cutting-edge research, excellent undergraduate and graduate teaching focused on critical thinking, exciting applied opportunities, vital service and community outreach both nationally and internationally, and preparation of students for a wide range of jobs, sociology plays a central role in quality liberal arts education. Sociology is a “social science”; it is a discipline grounded in using sociological theory and the scientific method to create the knowledge necessary for understanding and improving social life. Using theory as a foundation for analysis, sociologists collect and analyze empirical data useful in making decisions related to public life, such as social and economic policy, and private life, such as family and interpersonal health. It is this relationship between sociological theory, as the foundation of critical thinking, and the scientific method, as the guiding principles of analysis, which makes sociology a rapidly expanding field with expertise increasingly sought after by those who craft policies and create programs.

The Department of Sociology offers a Bachelor of Science in Sociology at the undergraduate level, as well as a Master of Science at the graduate level.

- Sociology, Bachelor of Science (B.S.) (p. 178)
- Accelerated Bachelor of Science and Master of Science Sociology (p. 180)
- Sociology, minor in (p. 180)

## Sociology, Bachelor of Science (B.S.)

The Bachelor of Science in Sociology requires a minimum of 120 credits, with at least 33 of those credits in sociology and other approved courses.

The baccalaureate curriculum in sociology seeks to ensure that each student develops a solid foundation in the basic principles, theories and techniques of analysis in sociology. It also encourages students to pursue an interdisciplinary approach by incorporating course credit from closely related subject areas in other programs. Since students majoring in sociology vary in their interests and career goals, the curriculum allows for a great deal of flexibility in developing individual courses of study. Students who are interested in pursuing graduate studies in sociology usually will take more than the minimum number of upper-level courses. The program provides opportunities for involvement in faculty research through its course offerings, which include independent study, internships and honors research.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Understand sociological theory  
Students will demonstrate an ability to apply different theoretical perspectives to social issues as well as compare and contrast basic theoretical orientations.
- Understand sociological concepts  
Students will demonstrate knowledge of basic concepts in sociology, such that students will be able to define, give examples and demonstrate the relevance of culture, social structure, institutions, socialization, stratification, social change and differentiations by race/ethnicity, gender, sexuality, age and class.
- Understand sociological research and analysis  
Students will demonstrate knowledge of basic methodological approaches (both quantitative and qualitative) in sociology and the general role of methodology in building sociological knowledge. Students will know how to retrieve data sets from the Internet, read and produce descriptive statistics, and work with data analysis software, such as SPSS.

## Degree requirements for Sociology, Bachelor of Science (B.S.)

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
<b>Total Hours</b>		<b>21-24</b>

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		

Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
<b>Total Hours</b>	<b>11-23</b>

<sup>1</sup> Course offered by the School of the Arts

## Collateral requirements

STAT 210	Basic Practice of Statistics <sup>2</sup>	3
----------	---	---

## Major core requirements

SOCY 101	Introduction to Sociology	3
SOCY 202	Foundations of Theory <sup>2</sup>	3
SOCY/POLI 320	Research Methods in the Social Sciences <sup>2</sup>	3
SOCY 402	Contemporary Theory <sup>2</sup>	3
SOCY 406	Sociology Senior Seminar <sup>2</sup>	3
<b>Total Hours</b>		<b>15</b>

<sup>2</sup> A minimum grade of C is required in this course.

## Sociology electives

300- to 400-level sociology courses	9
300- to 400-level sociology, anthropology or social science courses	6
300- to 400-level sociology course or upper-level course from approved sociology elective list below	3
<b>Total Hours</b>	<b>18</b>

## Open electives

Select 38-52 open elective credits	38-52
------------------------------------	-------

## Total minimum requirement 120 credits

### Approved sociology electives

#### Anthropology

ANTH 301/BIOL 341	Human Evolution	3
ANTH/INTL 415	Economic Anthropology	3
ANTH/RELS/INTL 425	Religion, Magic and Witchcraft	3

#### Criminal justice

CRJS 355	Criminological Theory	3
CRJS/GSW 382	Gender, Crime and Justice	3

#### Political science

POLI 303	Public Opinion, Polling and the Media	3
POLI/AFAM/GSW 318	Politics of Race, Class and Gender	3
POLI/INTL 358	Concepts of Comparative Government	3
POLI/INTL 365	International Political Economy	3

#### Psychology

PSYC 310	Industrial Psychology	3
----------	-----------------------	---

PSYC 321	Social Psychology	3
PSYC 323	Interpersonal Relations	3

#### Religious studies

RELS/INTL 311	Religions of the World	3
RELS/INTL 312	Religions of the World	3
RELS 334	Religion in Contemporary America	3

#### Social science

SOCS 303	Marriage and Family Relationships	3
SOCS 340	Human Sexuality	3
SOCS 389	AIDS: Myths and Realities	3

#### Urban studies

URSP 304	Urban Social Systems	3
URSP 306	Economic Geography	3
URSP/ANTH 312	History of Human Settlement	3
URSP 315	The Evolution of American Cities	3
URSP 316	Urban Life in Modern America	3
URSP/INTL 340	World Cities Outside of North America	3
URSP 350/FRLG 345/INTL 345	Great Cities of the World	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
MATH 131	Introduction to Contemporary Mathematics (if placed out of MATH 131 choose any approved H&S elective) (approved quantitative literacy)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved H&S diverse and global communities		3
Approved H&S General Education elective		3
Term Hours:		13

### Spring semester

HUMS 202	Choices in a Consumer Society	1
SOCY 101	Introduction to Sociology	3
STAT 210	Basic Practice of Statistics (if placed out or have already take STAT 210 choose any approved H&S elective)	3
UNIV 112	Focused Inquiry II	3
Approved H&S General education elective		3
Open elective		3
Term Hours:		16

### Sophomore year

Fall semester		
SOCY 320 or POLI 320	Research Methods in the Social Sciences or Research Methods in the Social Sciences	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S literature and civilization course		3
Foreign language (101-level)		4

Open elective	3
Term Hours:	16
<b>Spring semester</b>	
300-level sociology courses	6
Approved H&S experiential fine arts course	1-3
Approved H&S science and technology course	3-4
Foreign language (102 level)	4
Term Hours:	14-17
<b>Junior year</b>	
<b>Fall semester</b>	
300- to 400-level sociology courses (except SOCY 402 Sociological Theory or SOCY 406 Sociology Senior Seminar)	6
Open electives (upper-level preferred, may take additional SOCY electives)	9
Term Hours:	15
<b>Spring semester</b>	
300- to 400-level sociology, anthropology or social science course or upper-level course from approved sociology elective list	3
300- to 400-level sociology, anthropology or social science course	3
Open electives (upper-level preferred, may take additional SOCY electives)	9
Term Hours:	15
<b>Senior year</b>	
<b>Fall semester</b>	
SOCY 402 Contemporary Theory	3
Open electives (upper-level preferred, may take additional SOCY electives)	12
Term Hours:	15
<b>Spring semester</b>	
SOCY 406 Sociology Senior Seminar	3
Open electives (upper-level preferred, may take additional SOCY electives)	12
Term Hours:	15
Total Hours:	119-122

Total minimum requirement 120 credits

## Accelerated Bachelor of Science (B.S.) and Master of Science (M.S.) in Sociology

The accelerated B.S. and M.S. program allows qualified students, with a major in sociology, to earn both degrees in a minimum of five years by completing approved graduate courses during the senior year of their undergraduate program. The program will provide students with the opportunity to expand and deepen their knowledge of sociology, enhance their credentials for the job market and/or to prepare for further professional education. Students in the program may count up to 12 hours of graduate courses toward both the B.S. and M.S. degrees. Thus, the two degrees may be earned with a minimum of 144 hours instead of the 156 required if the degrees are pursued separately.

The program is restricted to students who have demonstrated a clear interest in sociology. Minimum qualifications for admittance to the program include completion of 90 undergraduate credit hours with an

overall GPA of 3.0, and a minimum of nine credit hours in sociology with a GPA of 3.3. Prior to being formally considered for admittance and before enrolling in graduate courses, the student must complete the graduate school application, submit GRE general aptitude scores and supply supporting information required for admission. All persons admitted to the program must meet the graduate student standards of performance, e.g., maintain a 3.0 GPA, and satisfactorily complete all requirements for the degree.

The director of graduate studies will provide guidance of students in this program. Students who are interested in this program should consult with the director of graduate studies or the director of undergraduate studies before they have completed 90 credits. Both directors may be contacted for more information about admission procedures.

Requirements for the Bachelor of Science in Sociology include the completion of a minimum of 120 credits. Students in the accelerated program may take up to six graduate sociology credits in each of the final two semesters of their undergraduate course work. These courses are shared credits with the graduate program, meaning that they will be applied to both undergraduate and graduate degree requirements. A maximum of 12 graduate credits may be taken prior to completion of the baccalaureate degree.

The Bachelor of Science degree will be awarded when the student has completed all requirements for the undergraduate degree, which may include the 12 graduate sociology credits. The graduate sociology courses that may be taken, once a student is admitted to the program, are:

SOCY 502	Contemporary Sociological Theory (may be used to meet the undergraduate major requirement for SOCY 402 and is a required course in the graduate program)	3
SOCY/STAT 508	Introduction to Social Statistics (recommended and may fulfill elective requirement in the undergraduate major)	3
SOCY/STAT 608	Statistics for Social Research (a required course in the graduate program and may fulfill elective requirement in the undergraduate major)	3
SOCY 601	Sociological Research Methods (a required course in the graduate program and may fulfill elective requirement in the undergraduate major)	3

Other SOCY graduate courses, with the approval of the director of graduate studies, may serve as an elective requirement for the M.S. degree and an elective for the undergraduate major

Total Hours	12
-------------	----

All accelerated program students must have their schedules approved by the director of graduate studies prior to registration.

## Sociology, minor in

A sociology minor consists of 18 credits including:

SOCY 101	Introduction to Sociology	3
SOCY 202	Foundations of Theory	3
Select nine additional credits in upper-level (300-400) sociology courses		9
Select three credits in any sociology, social science or anthropology course		3
Total Hours		18

## Bachelor of Interdisciplinary Studies Program

The Bachelor of Interdisciplinary Studies provides opportunities for students to combine disciplines in unique ways. Students can apply for a nontraditional, individualized and interdisciplinary course of study by designing their own curriculum. (For a detailed description of the individualized interdisciplinary studies program (p. 500) offered through the University College, see the program page in this bulletin.) Students also may apply for a prescribed interdisciplinary specialization: the liberal studies for early and elementary education major (p. 181) that coordinates with the Extended Teacher Preparation Program administered jointly by the College of Humanities and Sciences and the School of Education. The program descriptions and curriculum outlines may be accessed through the program search feature or by following the links above.

- Interdisciplinary Studies, Bachelor of (B.I.S.) with a liberal studies for early and elementary education major (p. 181)

## Interdisciplinary Studies, Bachelor of (B.I.S.) with a liberal studies for early and elementary education major [College of Humanities and Sciences]

The LSEE curriculum is carefully articulated to provide interdisciplinary course work and in-school learning experiences that prepare students to teach at the elementary level (P-6). A number of general education courses are either required or recommended as electives to prepare for the core curriculum of advanced courses in this liberal studies major and the Extended Teacher Preparation Program that follows. Students in this major benefit from belonging to a community of learners.

### Learning outcomes

Upon completing this program, students will have acquired:

- Proficiency in quantitative literacy: Students will demonstrate proficiency in understanding and explaining the categories of number and operations; algebra; geometry and measurement; and data analysis and probability.
- Proficiency in written and oral communication: Students will effectively communicate ideas in both written and oral formats.
- Proficiency in scientific knowledge: Students will integrate mathematics with life and physical sciences.
- Proficiency in humanities and social sciences: Students will integrate social sciences and apply content knowledge across humanities disciplines.
- Proficiency in experiential learning: Students will synthesize and apply content, theory and pedagogy in experiential learning

opportunities, including service-learning, school observations and practicum field placements.

- Proficiency in dispositions: Students will exhibit the professional dispositions for educators valued by the School of Education.
- Proficiency in reflection: Students will be able to engage in reflective practice and critically evaluate their own performance and writing, as well as those of others.

### Special requirements

To become an elementary school teacher, students are expected to declare the liberal studies for early and elementary education major. The major is the College of Humanities and Sciences' undergraduate part of the five-and-a-half-year Extended Teacher Preparation Program. The LSEE major requires a minimum of 120 credits within a highly structured, pre-professional program that combines with the Master of Teaching in the Extended Teacher Preparation Program in with the School of Education. Successful completion of the LSEE major results in a Bachelor of Interdisciplinary Studies degree, which is awarded simultaneously with the M.T.

The LSEE major is separated into two divisions: foundation level and upper level. Students are first admitted to the foundation level after review of their SAT scores and GPA. Entering freshmen and transfer or change-of-major students are required to have a minimum GPA of 2.5 to be admitted. Advancement to upper-level status requires 60 or more credits (including TEDU 101 and the classes listed as completing the College of Humanities and Sciences general education requirements), a minimum cumulative GPA of 3.0 and a passing score on PRAXIS I or its alternatives. After completing at least 75 credits, LSEE students with upper-level status can apply for admittance to the School of Education's Extended Teacher Preparation Program. With a minimum GPA of 3.0 in their last 60 credits and appropriate GRE or MAT scores, these LSEE students can apply to the graduate part of the program (M.T.) and continue their professional training.

Students must pass TEDU 101 and MATH 361 each with a minimum grade of C.

The B.I.S. with the LSEE major is not designed as a terminal degree and by itself will not fully certify one to teach. Students who have reached senior status (85 credit hours or more) in any other major must graduate with that major and return as post-baccalaureate students to the M.T. program.

## Degree requirements for Interdisciplinary Studies, Bachelor of (B.I.S.) with a liberal studies for early and elementary education major

### General Education requirements

University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3

Approved natural/physical sciences	3-4
Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
Total Hours	21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Major requirements

#### Math and statistics

MATH 303	Investigations in Geometry <sup>1</sup>	3
MATH 361	Numbers and Operations (minimum grade of C)	3
MATH 362	Algebra and Functions <sup>1</sup>	3
STAT 206	Data Analysis and Statistics for Elementary Education <sup>1,2</sup>	3

#### Natural sciences

Select one of the following biology sequences:		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory <sup>3</sup>	
BIOL/ENVS 103	Environmental Science <sup>3</sup>	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
Select one of the following:		3
CHEM 110	Chemistry and Society <sup>3</sup>	
PHYS 103	Elementary Astronomy <sup>3</sup>	
INSC 201	Energy! <sup>3</sup>	
Select one of the following:		3
ENVS 301	Introduction to Meteorology	
ENVS 310	Introduction to Oceanography	
INSC 300	Experiencing Science	
Select one of the following:		4
ENVS 105 & ENVZ 105	Physical Geology and Physical Geology Laboratory	

URSP 203 & URSZ 203	Physical Geography: Weather, Climate and Biogeography and Physical Geography Laboratory: Weather, Climate and Biogeography	
URSP 204 & URSZ 204	Physical Geography: Geomorphology and Soils and Physical Geography Laboratory: Geomorphology and Soils	
INSC 310	Content of Elementary Science <sup>1</sup>	3
<b>Social studies</b>		
ECON 203	Introduction to Economics	3
HIST 101	Survey of European History	3
POLI 103 or HIST 103	U.S. Government <sup>3</sup> Survey of American History	3
URSP 102	Introduction to Human Geography	3
Select one of the following:		3
RELS 108	Human Spirituality <sup>3</sup>	
RELS/INTL 311	Religions of the World	
RELS/INTL 312	Religions of the World	
SOCY/ANTH/GSW 304	Sociology of Families	3
or SOCS 302	Diverse Families and Children in the United States	
<b>Cross-cultural communication</b>		
Select one to six credits from the following:		1-6
ENGL/LING/GSW 452	Language and Gender	
ENGL/INTL 454/ ANTH 450	Cross-cultural Communication	
INTL 101	Human Societies and Globalization <sup>3</sup>	
INTL 493	International Studies Internship	
MASC/INTL 151	Global Communications <sup>3</sup>	
POLI/INTL 105	International Relations <sup>3</sup>	
TEDU/FRLG 575	Intercultural Communication (approval required)	
<b>Education</b>		
EDUS 301	Human Development and Learning	3
TEDU 101	Introduction to Teaching (minimum grade of C)	3
TEDU 310	Elementary School Practicum A (see curriculum outline for corequisites) <sup>1</sup>	2
TEDU 313	Elementary School Practicum B (see curriculum outline for corequisites) <sup>1</sup>	2
TEDU 330		3
TEDU/ENGL 386	Children's Literature I <sup>1</sup>	3
TEDU/ENGL 389	The Teaching of Writing Skills <sup>1</sup>	3
TEDU 390	Physical Education for the Elementary Teacher	3
TEDU 410	Classroom Management in Elementary Schools (see curriculum outline for corequisites) <sup>1</sup>	3
TEDU 411	Integrating the Arts in Curriculum for Young Children <sup>4</sup>	3
or ARTE 301	Art for Elementary Teachers	



TEDU 414	Curriculum and Methods for Early/Elementary Children (see curriculum outline for corequisites) <sup>1</sup>	4
TEDU 426	Teaching Reading and Other Language Arts (see curriculum outline for corequisites) <sup>1</sup>	3
Total Hours		83-88

<sup>1</sup> LSEE upper-level status required to take this class.

<sup>2</sup> STAT 206 recommended, but STAT 208, STAT 210 or STAT 212 will satisfy this requirement.

<sup>3</sup> Satisfies a general education credit.

<sup>4</sup> LSEE upper-level status required and class satisfies general education credit.

## Open electives

Consult with a program adviser regarding the selection of a possible minor or other coherent series of courses 0-5

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved diverse and global communities <sup>1,2</sup>		3
Approved quantitative literacy		3-4
Approved science and technology <sup>3</sup>		3-4
Term Hours:		13-15

### Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Approved general education elective <sup>1,4</sup>		3-4
Approved human, social and political behavior <sup>1,5</sup>		3-4
Approved literature and civilization		3-4
Select one of the following:		3
PHYS 103	Elementary Astronomy	3
CHEM 110	Chemistry and Society	3
INSC 201	Energy!	3
Term Hours:		16-19

### Sophomore year

Fall semester		Hours
HIST 101	Survey of European History	3
TEDU 101	Introduction to Teaching	3
UNIV 200	Inquiry and the Craft of Argument	3
Foreign language (101-level) or open elective		3-4
Select one of the following:		3
RELS 108	Human Spirituality <sup>6</sup>	3
RELS 311	Religions of the World	3
or INTL 311	or Religions of the World	

RELS 312	Religions of the World	3
or INTL 312	or Religions of the World	
Or open elective		3
Term Hours:		15-16

### Spring semester

EDUS 301	Human Development and Learning	3
MATH 361	Numbers and Operations	3
URSP 102	Introduction to Human Geography	3
URSP 204	Physical Geography: Geomorphology and	4
& URSZ 204	Soils and Physical Geography Laboratory: Geomorphology and Soils	
Foreign language (102-level) or open elective		3-4
Term Hours:		16-17

### Junior year

#### Fall semester

ECON 203	Introduction to Economics	3
MATH 362	Algebra and Functions <sup>7</sup>	3
POLI 103	U.S. Government (or open elective) <sup>6</sup>	3
Approved LSEE cross-cultural communication or open elective		1-6
Select one of the following:		3
ENVS 301	Introduction to Meteorology	3
ENVS 310	Introduction to Oceanography	3
INSC 300	Experiencing Science	3
Term Hours:		13-18

#### Spring semester

MATH 303	Investigations in Geometry <sup>7</sup>	3
TEDU 390	Physical Education for the Elementary Teacher	3
TEDU 411	Integrating the Arts in Curriculum for Young Children	3
or ARTE 301	or Art for Elementary Teachers	
Open electives		5
Select one of the following:		3
SOCS 302	Diverse Families and Children in the United States	3
or SOCY/ ANTH/ GSWS 304	or Sociology of Families	
Term Hours:		17

### Senior year

#### Fall semester

INSC 310	Content of Elementary Science <sup>7</sup>	3
STAT 206	Data Analysis and Statistics for Elementary Education <sup>7</sup>	3
TEDU 386	Children's Literature I	3
or ENGL 386	or Children's Literature I	
TEDU 389	The Teaching of Writing Skills	3
or ENGL 389	or The Teaching of Writing Skills	
Open elective		3
Term Hours:		15

#### Spring semester

TEDU 310	Elementary School Practicum AA (senior capstone) <sup>6,7,8</sup>	2
TEDU 410	Classroom Management in Elementary Schools <sup>7,8</sup>	3
TEDU 414	Curriculum and Methods for Early/Elementary Children <sup>7,8</sup>	4
TEDU 426	Teaching Reading and Other Language Arts <sup>7,8</sup>	3
Open elective		3
Term Hours:		15
Total Hours:		120-132

<sup>1</sup> Required for LSEE major.

<sup>2</sup> RELS 108 recommended.

<sup>3</sup> BIOL 101 and BIOZ 101 recommended.

<sup>4</sup> INTL 101, MASC 151/INTL 151 or POLI 105/INTL 105 recommended.

<sup>5</sup> POLI 103 recommended.

<sup>6</sup> Satisfies a general education credit.

<sup>7</sup> LSEE upper-level status required to take this class.

<sup>8</sup> Note: TEDU 310, TEDU 410, TEDU 414 and TEDU 426 must be taken as corequisites during the final semester.

## Economics Program

- Economics, Bachelor of Science (B.S.) [College of Humanities and Sciences] (p. 184)
- Economics, minor in (p. 186)

## Economics, Bachelor of Science (B.S.) [College of Humanities and Sciences]

Undergraduate work in economics is excellent preparation for careers in business, government and teaching, as well as for graduate work in economics and professional schools such as law, public administration and medicine. Specialization in economics prepares students for careers that emphasize analytical thinking, a broad understanding of the economy and business organizations and the proper choice of policies by governments and business enterprises. Because of their analytical, quantitative and decision-making skills, students who major in economics are sought after for a wide array of management and analyst positions.

Economics majors are strongly encouraged to take additional courses in statistics and mathematics, especially if they intend to pursue either careers as practicing economists or graduate study in economics or business. Recommended mathematics courses include one or more of the following courses:

ECON 403	Introduction to Mathematical Economics	3
MATH 201	Calculus with Analytic Geometry	4

Recommended statistics courses include one or more of the following courses:

ECON 501	Introduction to Econometrics	3
SCMA 302	Business Statistics II	3

STAT 314	Applications of Statistics	4
----------	----------------------------	---

Students should consult with their advisers to determine which of these courses fit their particular interests and backgrounds.

## Mission

The mission of the B.S. in Economics is to provide undergraduate students with economic knowledge and skills which will enable them to compete successfully in changing regional, national and global economic environments.

## Learning goals

The goal of the economics curriculum is to impart critical-thinking skills, communication skills and quantitative proficiency to its students.

## Learning outcomes

- Students will solve key microeconomic problems.
- Students will solve key macroeconomic problems.
- Students will be able to interpret and analyze data and express economic relationships using graphs, equations and words.
- Students will demonstrate strong oral and written communication skills.
- Students will be able to employ economic models and data to analyze questions of economic significance.

## Special requirements

Admission to the B.S. in Economics program is subject to academic qualifications as described on the Department of Economics website (<http://business.vcu.edu/departments-and-centers/economics/undergraduate-programs/bs-in-economics>).

The curriculum requires 33 credits of ECON courses. Students also must take MATH 200 or SCMA 212, as well as STAT 210 as collateral requirements as outlined in the degree requirements below. Students may need to take additional mathematics courses to satisfy the prerequisites for MATH 200 or SCMA 212.

## Degree requirements for Economics, Bachelor of Science (B.S.)

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
----------	-------------------------------	---

Approved H&S diverse and global communities	3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)	
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
<b>Total Hours</b>	<b>11-23</b>

<sup>1</sup> Course offered by the School of the Arts

## Collateral requirements

MATH 200	Calculus with Analytic Geometry	3-4
or SCMA 212	Differential Calculus and Optimization for Business	
STAT 210	Basic Practice of Statistics (or higher level statistics course)	3
or SCMA 301	Business Statistics I	
<b>Total Hours</b>		<b>6-7</b>

## Major requirements

ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
ECON 300	Contemporary Economic Issues	3
ECON 301	Microeconomic Theory	3
ECON 302	Macroeconomic Theory	3
Select one of the following:		3
ECON 431	Labor Economics	
ECON 489	Senior Seminar in Economics	
ECON 441	Experimental Economics (capstone)	
ECON electives (300- or 400-level)		15
<b>Total Hours</b>		<b>33</b>

## Open electives

Select 38-52 open elective credits	38-52
------------------------------------	-------

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
MATH 151	Precalculus Mathematics	3-4
or MATH 200	or Calculus with Analytic Geometry	
or SCMA 212	or Differential Calculus and Optimization for Business	
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved H&S literature and civilization		3

Approved H&S diverse and global communities			3
Term Hours:			13-14
<b>Spring semester</b>			
ECON	210	Principles of Microeconomics	3
HUMS	202	Choices in a Consumer Society	1
STAT	210	Basic Practice of Statistics	3
UNIV	112	Focused Inquiry II	3
Approved H&S human, social, and political behavior			3-4
Term Hours:			13-14

### Sophomore year

Fall semester		
ECON 211	Principles of Macroeconomics	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S general education elective		3-4
Foreign language (101-level)		4
Open elective		3
Term Hours:		16-17

Spring semester		
ECON 300	Contemporary Economic Issues	3
Approved H&S general education elective		3-4
Approved H&S science and technology		3-4
Foreign language (102-level)		4
Open elective or MATH 200 or SCMA 212		3-4
Term Hours:		16-19

### Junior year

Fall semester		
ECON 301	Microeconomic Theory	3
ECON elective (300- to 400-level)		3
Experiential fine arts		1-3
Open electives		9
Term Hours:		16-18

Spring semester		
ECON 302	Macroeconomic Theory	3
ECON elective (300- to 400-level)		3
Open electives		9
Term Hours:		15

### Senior year

Fall semester		
ECON 431 or ECON 489 or ECON 441	Labor Economics or Senior Seminar in Economics or Experimental Economics	3
ECON elective (300- to 400-level)		3
Open electives		10-11
Term Hours:		16-17
Spring semester		
ECON elective (300- to 400-level)		6
Open electives		9
Term Hours:		15
Total Hours:		120-129

## Economics, minor in

This minor, offered through the College of Humanities and Sciences, requires at least 18 credits in economics, including:

ECON 210	Principles of Microeconomics	6
ECON 211	and Principles of Macroeconomics	
ECON 301	Microeconomic Theory	3
ECON 302	Macroeconomic Theory	3
Select the remaining courses from upper-level (300-400) economics courses		6
Total Hours		18

## Interdisciplinary Degree Program in Science

**Charlene D. Crawley**  
Coordinator

[has.vcu.edu/science](http://has.vcu.edu/science) (<http://www.has.vcu.edu/science>)

The interdisciplinary program in science provides students with a broad, yet fundamental, grounding in the sciences. In addition to the spectrum of required mathematics and science courses, students select a concentration from biology, chemistry, physics or professional science.

Students completing this curriculum earn a Bachelor of Science in Science.

For information concerning the program and advising, contact the program coordinator. Selected faculty in biology, chemistry, mathematical sciences and physics are the academic advisers for this program.

- Science, Bachelor of Science (B.S.) with a concentration in:
  - Biology (p. 186)
  - Chemistry (p. 190)
  - Physics (p. 193)
  - Professional science (p. 195)

## Science, Bachelor of Science (B.S.) with a concentration in biology

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate broad and core science proficiency
- Demonstrate competency in at least two sciences or in a non-science area
- Apply learning to selection and pursuit of professional or graduate career objective
- Demonstrate proficiency in communication of scientific or research findings
- Demonstrate ability to apply the scientific method/approach to professional problems
- Demonstrate appreciation of the interrelation of core sciences to interdisciplinary problems

## Special requirements

The Bachelor of Science in Science requires a minimum of 120 credits.

Along with the general education requirements of the undergraduate programs and the College of Humanities and Sciences for a Bachelor of Science degree, this curriculum requires 28 to 33 credits in foundation science and mathematics courses and 36 to 38 credits in supplemental courses in the concentration. In preparation for the required mathematical sciences courses, all students must take the Mathematics Placement Test. Science majors are strongly encouraged to select a minor in an area different from their area of concentration that will complement their career interests and contribute additional upper-level credits to their curriculum.

Science majors declaring the biology concentration may not simultaneously declare a major or minor in biology.

## Grade requirements

A minimum grade of C is required in each prerequisite course:

CHEM 100	Introductory Chemistry (if required through placement test)	3
CHEM 101	General Chemistry	3
CHEM 102	General Chemistry	3
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3

A minimum grade of C is required in the following courses before enrollment in advanced BIOL courses:

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 300	Cellular and Molecular Biology	3

## Degree requirements for Science, Bachelor of Science (B.S.) with a concentration in biology

### General Education requirements

University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

**Additional College of Humanities and Sciences requirements (11-23 credits)**

HUMS 202	Choices in a Consumer Society	1
----------	-------------------------------	---

Approved H&S diverse and global communities	3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)	
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
<b>Total Hours</b>	<b>11-23</b>

<sup>1</sup> Course offered by the School of the Arts

## Major requirements

### Foundational courses

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
ENVS 301	Introduction to Meteorology (or upper-level natural or health science elective from list below)	3
ENVS 310	Introduction to Oceanography (or upper-level natural or health science elective from list below)	2-3
INSC 490	Capstone Research Experience in Interdisciplinary Science (or an approved capstone from another natural science major from list below)	1-3
MATH 151	Precalculus Mathematics (or placement)	4
MATH 200 or SCMA 212 or STAT 314	Calculus with Analytic Geometry Differential Calculus and Optimization for Business Applications of Statistics	3-4
PHYS 201 or PHYS 207	General Physics University Physics I	4-5
STAT 208 or STAT 210	Statistical Thinking Basic Practice of Statistics	3

### Supplemental courses

BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 300	Cellular and Molecular Biology	3
BIOL 310	Genetics	3
BIOZ 310	Laboratory in Genetics (or other upper-level biology laboratory)	1-2
BIOL 317	Ecology	3
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
Select one of the following:		4
ENVS 105 & URSZ 204	Physical Geology and Physical Geography Laboratory: Geomorphology and Soils	

URSZ 204 & URSZ 204	Physical Geography: Geomorphology and Soils and Physical Geography Laboratory: Geomorphology and Soils	
Or a 200-level or higher natural science elective and a 200-level or higher natural science laboratory elective from the list below		
PHYS 202 or PHYS 208	General Physics University Physics II	4-5
Select one upper-level animal or one upper-level plant course, with laboratory, from list below		4
Select two upper-level biology electives		6
<b>Total Hours</b>		<b>64-71</b>

## Open electives

Select three to 24 open elective credits	3-24
<b>Total Hours</b>	<b>3-24</b>

## Total minimum requirement 120 credits

### Animal and plant courses

#### Animal group

BIOL 302	<sup>1</sup>	
BIOL 309	Entomology <sup>1</sup>	4
BIOL 312	Invertebrate Zoology	3
BIOZ 312	Invertebrate Zoology Laboratory	1
BIOL 313	Vertebrate Natural History	3
BIOZ 313	Vertebrate Natural History Laboratory	1
BIOL 391	Topics in Biology (as approved)	1-4
BIOZ 391	Topics in Biology Laboratory (as approved)	1-4
BIOL 402	Comparative Vertebrate Anatomy	5
BIOL 416	Ornithology	3
BIOZ 416	Ornithology Laboratory	2
BIOL 417	Mammalogy <sup>1</sup>	4
BIOL 435	Herpetology <sup>1</sup>	3
BIOL 445	Neurobiology and Behavior <sup>1</sup>	4
BIOL 503	Fish Biology <sup>1</sup>	4

#### Plant group

BIOL 320	Biology of the Seed Plant <sup>1</sup>	4
BIOL 321	Plant Development	3
BIOZ 321	Plant Development Laboratory	2
BIOL 322	Economic Botany	3
BIOL 323	Plant Physiology	3
BIOL 391	Topics in Biology (as approved)	1-4
BIOZ 391	Topics in Biology Laboratory (as approved)	1-4

<sup>1</sup> These courses include laboratory hours and may be used to satisfy laboratory requirements.

### Natural science electives

LFSC 301	Integrative Life Sciences Research	3
LFSC 401	Faith and Life Sciences	3
PHTX 400	Drugs and their Actions	3



Any 200-level or higher BIOL, BNFO, CHEM, CLSE, EGRB, ENVS, FRSC, INSC or PHYS course, except:

BIOL 220		
BIOL 292		
BIOL 392	Introduction to Research	
BIOL 475	Biology Capstone Seminar: ____	
BIOL 477	Biology Capstone Experience	
BIOL 489	Communicating Research	
BIOL 490	Presenting Research	
BIOL 492	Independent Study	
BIOL 493	Biology Internship	
BIOL 495	Research and Thesis	
BIOL 496	Biology Preceptorship	
BNFO 292	Independent Study	
BNFO 492	Independent Study	
BNFO 496	Undergraduate Teaching Assistantship in Bioinformatics	
CHEM 392	Directed Study	
CHEM 492	Independent Study	
CHEM 493	Chemistry Internship	
ENGR 490	Engineering Seminar	
ENGR 492	Independent Study in Engineering	
ENVS 490	Research Seminar in Environmental Studies	
ENVS 492	Independent Study	
ENVS 493	Environmental Studies Internship	
FRSC 490	Professional Practices in Forensic Science	
FRSC 492	Forensic Science Independent Study	
FRSC 493	Forensic Science Internship	
INSC 490	Capstone Research Experience in Interdisciplinary Science	
PHYS 490	Seminar in Conceptual Physics	
PHYS 492	Independent Study	

#### Natural science laboratory electives

BIOL 205	Basic Human Anatomy <sup>1</sup>	4
BIOL 302	<sup>1</sup>	5
BIOL 309	Entomology <sup>1</sup>	4
BIOL 320	Biology of the Seed Plant <sup>1</sup>	4
BIOL 402	Comparative Vertebrate Anatomy <sup>1</sup>	5
BIOL 417	Mammalogy <sup>1</sup>	4
BIOL 435	Herpetology <sup>1</sup>	3
BIOL 445	Neurobiology and Behavior <sup>1</sup>	4
BIOL 503	Fish Biology <sup>1</sup>	4
BIOZ: any 200-level or higher course		
BNFO 380	Introduction to Mathematical Biology <sup>1</sup>	4
BNFO 420	Applications in Bioinformatics <sup>1</sup>	3
BNFO 440	Computational Methods in Bioinformatics <sup>1</sup>	3
CHEZ: any 200-level or higher course		
EGRB 307	Biomedical Instrumentation <sup>1</sup>	4
EGRB 308	Biomedical Signal Processing <sup>1</sup>	4
EGRB 310	Biomechanics <sup>1</sup>	4

ENVZ 335	Environmental Geology Laboratory	1
FRSZ: any 200-level or higher course		
PHIZ 206	Human Physiology Laboratory	1
PHYS 202	General Physics <sup>1</sup>	4
PHYS 208	University Physics II <sup>1</sup>	5
PHYZ 320	Modern Physics Laboratory	1
URSZ 203	Physical Geography Laboratory: Weather, Climate and Biogeography	1

<sup>1</sup> Courses have a combined lecture and lab and will satisfy both natural science lecture and laboratory requirements.

#### Health science electives

AFAM/ANTH/INTL/ GSWS 309	Global Women's Health	3
AFAM 310	African American Health: Health Disparities	3
AFAM 401	African-Americans and the U.S. Health Care System	3
HPEX 325	Pathology and Pharmacology in Athletic Training	3
HPEX 345	Nutrition for Health and Disease	3
HPEX 350	Nutrition	3
HPEX 353	Disease Trends, Prevention and Control	3
HPEX 373	Structural Kinesiology	3
HPEX 374	Musculoskeletal Structure and Movement	4
HPEX 375	Physiology of Exercise	3
HPEX 440	Chronic Disease and Exercise Management	3
PSYC 401	Physiological Psychology	3
PSYC 412	Health Psychology	3
PSYC/GSWS 414	Psychology of Women's Health	3
SCTS 300	Introduction to Science and Technology Studies	3
SCTS 301	Illness Narratives	3
SCTS 392	Revolutions in Science I	3
SCTS 393	Revolutions in Science II	3
SCTS 397	Genetics and Society: 1865 to the Present	3
SCTS 398	History of Medicine and Public Health: ____	3
SOCY 445	Medical Sociology	3
GSWS 392	Women's Health Care Across the Life Span	3

#### Natural science capstones (approved for biology concentration)

BIOL 475	Biology Capstone Seminar: ____	1-3
BIOL 477	Biology Capstone Experience (in conjunction with BIOL 492, BIOL 493, BIOL 495 or BIOL 497, as specified and approved by the biology department)	0
BIOZ 476	Biology Capstone Laboratory	2
BNFO 420	Applications in Bioinformatics	3

CLSE 402 & CLSE 403	Senior Design Studio I (Laboratory/ Project Time) and Senior Design Studio II (Laboratory/Project Time)	4
EGRB 402	Biomedical Engineering Senior Design Studio	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
MATH 151	Precalculus Mathematics (or placement)	4
STAT 208 or STAT 210	Statistical Thinking or Basic Practice of Statistics	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved science and technology		3-4
Term Hours:		14-15

#### Spring semester

CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
HUMS 202	Choices in a Consumer Society	1
MATH 200 or SCMA 212 or STAT 314	Calculus with Analytic Geometry or Differential Calculus and Optimization for Business or Applications of Statistics	3-4
UNIV 112	Focused Inquiry II	3
Approved human, social and political behavior		3-4
Term Hours:		14-16

#### Sophomore year

Fall semester		Hours
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
PHYS 201 or PHYS 207	General Physics or University Physics I	4-5
UNIV 200	Inquiry and the Craft of Argument	3
Experiential fine arts (SPCH 321 or other upper-level option recommended)		1-3
Term Hours:		16-19

#### Spring semester

BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
PHYS 202 or PHYS 208	General Physics or University Physics II	4-5
Approved diverse and global communities		3

Approved literature and civilization	3
Term Hours:	14-15

#### Junior year

Fall semester		Hours
BIOL 300	Cellular and Molecular Biology	3
BIOL 317	Ecology	3
ENVS 105 or URSP 204	Physical Geology or Physical Geography: Geomorphology and Soils	3
URSZ 204	Physical Geography Laboratory: Geomorphology and Soils	1
Foreign language (101) or upper-level minor elective		3-4
Open elective or upper-level minor elective		2-3
Term Hours:		15-17

#### Spring semester

BIOL 310	Genetics	3
ENVS 301	Introduction to Meteorology (or upper-level science elective)	3
Select one of the following:		1-2
BIOZ 310	Laboratory in Genetics	-
Or other upper-level biology laboratory		-
Approved General Education elective		3
Foreign language (102) or upper-level minor elective		3-4
Open elective or upper-level minor elective		3
Term Hours:		16-18

#### Senior year

Fall semester		Hours
Select one of the following:		2-3
ENVS 310	Introduction to Oceanography	-
Or upper-level science elective		-
One upper-level animal or upper-level plant course, with laboratory		4
Open electives or upper-level minor electives		9
Term Hours:		15-16

#### Spring semester

Select one of the following:		1-3
INSC 490	Capstone Research Experience in Interdisciplinary Science	-
Or approved capstone from another science major (biology, chemistry or physics)		-
Approved General Education elective		3-4
One upper-level animal or upper-level plant course, with laboratory		3-4
Open electives or upper-level minor electives, as needed		6
Upper-level biology elective		3
Term Hours:		16-20
Total Hours:		120-136

## Science, Bachelor of Science (B.S.) with a concentration in chemistry

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate broad and core science proficiency
- Demonstrate competency in at least two sciences or in a non-science area
- Apply learning to selection and pursuit of professional or graduate career objective
- Demonstrate proficiency in communication of scientific or research findings
- Demonstrate ability to apply the scientific method/approach to professional problems
- Demonstrate appreciation of the interrelation of core sciences to interdisciplinary problems

### Special requirements

The Bachelor of Science in Science requires a minimum of 120 credits.

Along with the general education requirements of the undergraduate programs and the College of Humanities and Sciences for a Bachelor of Science degree, this curriculum requires 29 to 33 credits in foundation science and mathematics courses and 33 to 34 credits in supplemental courses in the concentration. In preparation for the required mathematical sciences courses, all students must take the Mathematics Placement Test. Science majors are strongly encouraged to select a minor in an area different from their area of concentration that will complement their career interests and contribute additional upper-level credits to their curriculum.

Science majors declaring the chemistry concentration may not simultaneously declare a major or minor in chemistry.

### Grade requirements

A minimum grade of C is required in each prerequisite course:

CHEM 100	Introductory Chemistry (if required through placement test)	3
CHEM 101	General Chemistry	3
CHEM 102	General Chemistry	3
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3

A minimum grade of C is required in the following courses before enrollment in advanced BIOL courses:

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 300	Cellular and Molecular Biology	3

## Degree requirements for Science, Bachelor of Science (B.S.) with a concentration in chemistry

### General Education requirements

University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Major requirements

Foundational courses

Select one of the following:		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	
BIOL/ENVS 103	Environmental Science	
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
ENVS 301	Introduction to Meteorology (or upper-level natural or health science elective from list below)	3
ENVS 310	Introduction to Oceanography (or upper-level natural or health science elective from list below)	2-3

INSC 490	Capstone Research Experience in Interdisciplinary Science (or an approved capstone from another natural science major from list below)	1-3
MATH 151	Precalculus Mathematics (or placement)	4
MATH 200	Calculus with Analytic Geometry	4
PHYS 201	General Physics	4-5
or PHYS 207	University Physics I	
STAT 208	Statistical Thinking	3
or STAT 210	Basic Practice of Statistics	

**Supplemental courses**

Select one of the following:		4
BIOL 151	Introduction to Biological Sciences I	
& BIOZ 151	and Introduction to Biological Science Laboratory I	

BIOL 201	Human Biology	
& BIOZ 201	and Human Biology Laboratory	

Select one of the following:		3
------------------------------	--	---

BIOL 317	Ecology	
ENVS/PHYS 315	Energy and the Environment	
BIOL 332/ENVS 330	Environmental Pollution	

Or upper-level natural science elective from list below

CHEM 102	General Chemistry	4
& CHEZ 102	and General Chemistry Laboratory II	
CHEM 301	Organic Chemistry	5
& CHEZ 301	and Organic Chemistry Laboratory I	
CHEM 302	Organic Chemistry	5
& CHEZ 302	and Organic Chemistry Laboratory II	
CHEM 309	Quantitative Analysis	4
& CHEZ 309	and Quantitative Analysis Laboratory	

Select one of the following:		4
------------------------------	--	---

ENVS 105	Physical Geology	
& URSZ 204	and Physical Geography Laboratory: Geomorphology and Soils	

URSP 204	Physical Geography: Geomorphology and Soils	
& URSZ 204	and Physical Geography Laboratory: Geomorphology and Soils	

Or a 200-level or higher natural science elective and a 200-level or higher natural science laboratory elective from the list below

PHYS 202	General Physics	4-5
or PHYS 208	University Physics II	

Total Hours		62-67
-------------	--	-------

**Open electives**

Select seven-26 open elective credits		7-26
---------------------------------------	--	------

Total Hours		7-26
-------------	--	------

**Total minimum requirement 120 credits****Natural science electives**

LFSC 301	Integrative Life Sciences Research	3
LFSC 401	Faith and Life Sciences	3

PHTX 400	Drugs and their Actions	3
----------	-------------------------	---

Any 200-level or higher BIOL, BNFO, CHEM, CLSE, EGRB, ENVS, FRSC, INSC or PHYS course, except:

BIOL 220		
BIOL 292		
BIOL 392	Introduction to Research	
BIOL 475	Biology Capstone Seminar: ____	
BIOL 477	Biology Capstone Experience	
BIOL 489	Communicating Research	
BIOL 490	Presenting Research	
BIOL 492	Independent Study	
BIOL 493	Biology Internship	
BIOL 495	Research and Thesis	
BIOL 496	Biology Preceptorship	
BNFO 292	Independent Study	
BNFO 492	Independent Study	
BNFO 496	Undergraduate Teaching Assistantship in Bioinformatics	
CHEM 392	Directed Study	
CHEM 492	Independent Study	
CHEM 493	Chemistry Internship	
ENGR 490	Engineering Seminar	
ENGR 492	Independent Study in Engineering	
ENVS 490	Research Seminar in Environmental Studies	
ENVS 492	Independent Study	
ENVS 493	Environmental Studies Internship	
FRSC 490	Professional Practices in Forensic Science	
FRSC 492	Forensic Science Independent Study	
FRSC 493	Forensic Science Internship	
INSC 490	Capstone Research Experience in Interdisciplinary Science	
PHYS 490	Seminar in Conceptual Physics	
PHYS 492	Independent Study	

**Natural science laboratory electives**

BIOL 205	Basic Human Anatomy <sup>1</sup>	4
BIOL 302	<sup>1</sup>	5
BIOL 309	Entomology <sup>1</sup>	4
BIOL 320	Biology of the Seed Plant <sup>1</sup>	4
BIOL 402	Comparative Vertebrate Anatomy <sup>1</sup>	5
BIOL 417	Mammalogy <sup>1</sup>	4
BIOL 435	Herpetology <sup>1</sup>	3
BIOL 445	Neurobiology and Behavior <sup>1</sup>	4
BIOL 503	Fish Biology <sup>1</sup>	4
BIOZ: any 200-level or higher course		
BNFO 380	Introduction to Mathematical Biology <sup>1</sup>	4
BNFO 420	Applications in Bioinformatics <sup>1</sup>	3
BNFO 440	Computational Methods in Bioinformatics <sup>1</sup>	3

CHEZ: any 200-level or higher course		
EGRB 307	Biomedical Instrumentation <sup>1</sup>	4
EGRB 308	Biomedical Signal Processing <sup>1</sup>	4

EGRB 310	Biomechanics <sup>1</sup>	4
ENVZ 335	Environmental Geology Laboratory	1
FRSZ: any 200-level or higher course		
PHIZ 206	Human Physiology Laboratory	1
PHYS 202	General Physics <sup>1</sup>	4
PHYS 208	University Physics II <sup>1</sup>	5
PHYZ 320	Modern Physics Laboratory	1
URSZ 203	Physical Geography Laboratory: Weather, Climate and Biogeography	1

<sup>1</sup> Courses have a combined lecture and lab and will satisfy both natural science lecture and laboratory requirements.

#### Health science electives

AFAM/ANTH/INTL/ GSWS 309	Global Women's Health	3
AFAM 310	African American Health: Health Disparities	3
AFAM 401	African-Americans and the U.S. Health Care System	3
HPEX 325	Pathology and Pharmacology in Athletic Training	3
HPEX 345	Nutrition for Health and Disease	3
HPEX 350	Nutrition	3
HPEX 353	Disease Trends, Prevention and Control	3
HPEX 373	Structural Kinesiology	3
HPEX 374	Musculoskeletal Structure and Movement	4
HPEX 375	Physiology of Exercise	3
HPEX 440	Chronic Disease and Exercise Management	3
PSYC 401	Physiological Psychology	3
PSYC 412	Health Psychology	3
PSYC/GSWS 414	Psychology of Women's Health	3
SCTS 300	Introduction to Science and Technology Studies	3
SCTS 301	Illness Narratives	3
SCTS 392	Revolutions in Science I	3
SCTS 393	Revolutions in Science II	3
SCTS 397	Genetics and Society: 1865 to the Present	3
SCTS 398	History of Medicine and Public Health: —	3
SOCY 445	Medical Sociology	3
GSWS 392	Women's Health Care Across the Life Span	3

#### Natural science capstones (approved for chemistry concentration)

BNFO 420	Applications in Bioinformatics	3
CHEM 398	Professional Practices and Perspectives Seminar	1
CLSE 402 & CLSE 403	Senior Design Studio I (Laboratory/Project Time) and Senior Design Studio II (Laboratory/Project Time)	4

EGRB 402	Biomedical Engineering Senior Design Studio	3
----------	---	---

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
MATH 151	Precalculus Mathematics (or placement)	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved diverse and global communities		3
Term Hours:		15

#### Spring semester

CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry	4
UNIV 112	Focused Inquiry II	3
Approved human, social and political behavior		3
Term Hours:		15

#### Sophomore year

##### Fall semester

Select one of the following:		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	-
BIOL 103 or ENVS 103	Environmental Science or Environmental Science	-
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	-
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
UNIV 200	Inquiry and the Craft of Argument	3
Experiential fine arts		1-3
Term Hours:		13-15

##### Spring semester

Select one of the following:		4
BIOL 201 & BIOZ 201	Human Biology and Human Biology Laboratory	-
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	-
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
STAT 208 or STAT 210	Statistical Thinking or Basic Practice of Statistics	3
Approved literature and civilization		3
Term Hours:		15

#### Junior year

##### Fall semester



CHEM 309	Quantitative Analysis	4
& CHEZ 309	and Quantitative Analysis Laboratory	
PHYS 201	General Physics	4-5
or PHYS 207	or University Physics I	
Approved General Education elective		3
Foreign language (101), upper-level open elective or minor elective		3-4
Term Hours:		14-16

**Spring semester**

ENVS 301	Introduction to Meteorology (or upper-level science elective)	3
PHYS 202	General Physics	4-5
or PHYS 208	or University Physics II	
Approved science and technology		3-4
Foreign language (102), upper-level open elective or minor elective		3-4
Upper-level open elective or minor elective		3
Term Hours:		16-19

**Senior year****Fall semester**

BIOL 317	Ecology	3
or ENVS 315	or Energy and the Environment	
or PHYS 315	or Energy and the Environment	
or PHYS 315	or Environmental Pollution	
or BIOL 332	or Environmental Pollution	
or ENVS 330		
ENVS 105	Physical Geology	3
or URSP 204	or Physical Geography: Geomorphology and Soils	
URSZ 204	Physical Geography Laboratory: Geomorphology and Soils	1
Approved General Education elective		3
Upper-level open elective or minor electives		6
Term Hours:		16

**Spring semester**

ENVS 310	Introduction to Oceanography (or upper-level science elective)	3
Select one of the following:		1-3
INSC 490	Capstone Research Experience in Interdisciplinary Science	-
Or approved capstone from another science major (biology, chemistry or physics)		-
Upper-level open electives or minor electives		12
Term Hours:		16-18
Total Hours:		120-129

## Science, Bachelor of Science (B.S.) with a concentration in physics

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate broad and core science proficiency
- Demonstrate competency in at least two sciences or in a non-science area
- Apply learning to selection and pursuit of professional or graduate career objective
- Demonstrate proficiency in communication of scientific or research findings
- Demonstrate ability to apply the scientific method/approach to professional problems
- Demonstrate appreciation of the interrelation of core sciences to interdisciplinary problems

### Special requirements

The Bachelor of Science in Science requires a minimum of 120 credits.

Along with the general education requirements of the undergraduate programs and the College of Humanities and Sciences for a Bachelor of Science degree, this curriculum requires 27 credits in foundation science and mathematics courses and 34 credits in supplemental courses in the concentration. In preparation for the required mathematical sciences courses, all students must take the Mathematics Placement Test. Science majors are strongly encouraged to select a minor in an area different from their area of concentration that will complement their career interests and contribute additional upper-level credits to their curriculum

### Grade requirements

A minimum grade of C is required in each prerequisite course:

CHEM 100	Introductory Chemistry (if required through placement test)	3
CHEM 101	General Chemistry	3
CHEM 102	General Chemistry	3
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3

A minimum grade of C is required in the following courses before enrollment in advanced BIOL courses:

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 300	Cellular and Molecular Biology	3

## Degree requirements for Science, Bachelor of Science (B.S.) with a concentration in physics

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	3
UNIV 200 Inquiry and the Craft of Argument	3
Approved humanities/fine arts	3
Approved natural/physical sciences	3-4
Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
<b>Total Hours</b>	<b>21-24</b>

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202 Choices in a Consumer Society	1
Approved H&S diverse and global communities	3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)	
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
<b>Total Hours</b>	<b>11-23</b>

<sup>1</sup> Course offered by the School of the Arts

### Major requirements

#### Foundational courses

Select one of the following:	4
BIOL 101 Biological Concepts & BIOZ 101 and Biological Concepts Laboratory	
BIOL/ENVS 103 Environmental Science	
BIOL 151 Introduction to Biological Sciences I & BIOZ 151 and Introduction to Biological Science Laboratory I	
BIOL 152 Introduction to Biological Sciences II & BIOZ 152 and Introduction to Biological Science Laboratory II	
CHEM 101 General Chemistry & CHEZ 101 and General Chemistry Laboratory I	4
ENVS 301 Introduction to Meteorology (or upper-level science elective)	3
ENVS 310 Introduction to Oceanography (or upper-level science elective)	3
Select one of the following:	1-3

INSC 490	Capstone Research Experience in Interdisciplinary Science	
Or an approved capstone from another science major (biology, chemistry or physics)		
MATH 151	Precalculus Mathematics (or placement)	4
MATH 200	Calculus with Analytic Geometry	4
PHYS 207	University Physics I	5
<b>Supplemental courses</b>		
MATH 201	Calculus with Analytic Geometry	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
PHYS 208	University Physics II	5
PHYS 301	Classical Mechanics I	3
PHYS 320	Modern Physics	4
& PHYZ 320	and Modern Physics Laboratory	
PHYS 450	Senior Physics Laboratory	3
Select an additional eight to nine credits from the following:		9
CHEM 102	General Chemistry	
& CHEZ 102	and General Chemistry Laboratory II	
MATH/OPER 327		
PHYS 103	Elementary Astronomy	
& PHYZ 103	and Elementary Astronomy Laboratory	
PHYS/MHIS 307	The Physics of Sound and Music	
Or any course allowable for the B.S. in Physics, or a science elective approved by adviser		
<b>Total Hours</b>		<b>63-65</b>

### Open electives

Select 13-27 open elective credits	13-27
------------------------------------	-------

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
CHEM 101	General Chemistry	4
& CHEZ 101	and General Chemistry Laboratory I	
MATH 151	Precalculus Mathematics	4
or MATH 200	or Calculus with Analytic Geometry	
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved diverse and global communities		3
<b>Term Hours:</b>		<b>15</b>

#### Spring semester

CHEM 102	General Chemistry	4
& CHEZ 102	and General Chemistry Laboratory II	
HUMS 202	Choices in a Consumer Society	1
MATH 200	Calculus with Analytic Geometry	4
or MATH 201	or Calculus with Analytic Geometry	
PHYS 207	University Physics I	5

UNIV 112	Focused Inquiry II	3
Term Hours:		17

**Sophomore year****Fall semester**

Select one of the following:		4
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	-
BIOL 103 or ENVS 103	Environmental Science or Environmental Science	-
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	-
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	-
MATH 201 or MATH 307	Calculus with Analytic Geometry or Multivariate Calculus	4
PHYS 208	University Physics II	5
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		16

**Spring semester**

MATH 301	Differential Equations	3
PHYS 320 & PHYZ 320	Modern Physics and Modern Physics Laboratory	4
Approved human, social and political behavior		3-4
Approved literature and civilization		3
Term Hours:		13-14

**Junior year****Fall semester**

PHYS 103 or MATH 327	Elementary Astronomy or	3
PHYS 301	Classical Mechanics I	3
PHYS 307	The Physics of Sound and Music (fulfills experiential fine arts gen ed requirement)	3
Approved General Education elective		3-4
Foreign language (101), upper-level open elective or minor elective		3-4
Term Hours:		15-17

**Spring semester**

ENVS 301	Introduction to Meteorology (or upper-level science elective)	3
ENVS 310	Introduction to Oceanography (or upper- level science elective)	3
PHYS 450	Senior Physics Laboratory	3
Approved science and technology (if not already fulfilled by BIOL 101 or PHYS 103)		0-3
Foreign language (102), upper-level open elective or minor elective		3-4
Upper-level open elective or minor elective		3
Term Hours:		15-19

**Senior year****Fall semester**

BIOL 317 or ENVS 315 or PHYS 315 or BIOL 332 or ENVS 330	Ecology or Energy and the Environment or Energy and the Environment or Environmental Pollution or Environmental Pollution	3
--	---	---

ENVS 105 or URSP 204	Physical Geology or Physical Geography: Geomorphology and Soils	3
----------------------------	---	---

URSZ 204	Physical Geography Laboratory: Geomorphology and Soils	1
----------	---	---

Approved General Education elective		3
-------------------------------------	--	---

Experiential fine arts (if not fulfilled by PHYS/MHIS 307, upper-level recommended)		1-3
--	--	-----

Upper-level open elective or minor elective		3
---	--	---

Term Hours:		14-16
-------------	--	-------

**Spring semester**

Select one of the following:		1-3
------------------------------	--	-----

INSC 490	Capstone Research Experience in Interdisciplinary Science	-
----------	--	---

Or approved capstone from another science major (biology, chemistry or physics)		-
--	--	---

Upper-level open electives or minor electives		11-12
---	--	-------

Upper-level science elective		3
------------------------------	--	---

Term Hours:		15-18
-------------	--	-------

Total Hours:		120-132
--------------	--	---------

## Science, Bachelor of Science (B.S.) with a concentration in professional science

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate broad and core science proficiency
- Demonstrate competency in at least two sciences or in a non-science area
- Apply learning to selection and pursuit of professional or graduate career objective
- Demonstrate proficiency in communication of scientific or research findings
- Demonstrate ability to apply the scientific method/approach to professional problems
- Demonstrate appreciation of the interrelation of core sciences to interdisciplinary problems

### Special requirements

The Bachelor of Science in Science requires a minimum of 120 credits.

Along with the general education requirements of the undergraduate programs and the College of Humanities and Sciences for a Bachelor of Science degree, this curriculum requires 29 to 33 credits in foundation science and mathematics courses and 35 to 39 credits in supplemental courses in the concentration. In preparation for the

required mathematical sciences courses, all students must take the Mathematics Placement Test. Science majors are strongly encouraged to select a minor in an area different from their area of concentration that will complement their career interests and contribute additional upper-level credits to their curriculum.

## Grade requirements

A minimum grade of C is required in each prerequisite course:

CHEM 100	Introductory Chemistry (if required through placement test)	3
CHEM 101	General Chemistry	3
CHEM 102	General Chemistry	3
CHEM 301	Organic Chemistry	3
CHEM 302	Organic Chemistry	3

A minimum grade of C is required in the following courses before enrollment in advanced BIOL courses:

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 300	Cellular and Molecular Biology	3

## Degree requirements for B.S. in Science (concentration in professional science)

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3

Foreign language through the 102 level (by course or placement)	0-8
Total Hours	11-23

<sup>1</sup> Course offered by the School of the Arts

## Major requirements

### Foundational courses

Select one of the following:		4
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
BIOL 341/ANTH 301	Human Evolution (or upper-level natural science elective from list below)	3
Select one of the following:		4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	
Select one of the following:		3
INSC 300	Experiencing Science	
ENVS/ENGL 368	Nature Writing	
Or upper-level natural science elective from list below		
MATH 151	Precalculus Mathematics (or placement)	4
STAT 208 or STAT 210	Statistical Thinking Basic Practice of Statistics	3
Select one of the following:		3-4
MATH 200	Calculus with Analytic Geometry	
SCMA 212	Differential Calculus and Optimization for Business	
STAT 314	Applications of Statistics	
INSC 490	Capstone Research Experience in Interdisciplinary Science (or an approved capstone from another natural science major from list below)	1-3
Select one of the following:		4-5
PHYS 201	General Physics	
PHYS 202	General Physics	
PHYS 207	University Physics I	
PHYS 208	University Physics II	

### Supplemental courses

Select one of the following:	3
BIOL 317 Ecology	
BIOL 332/ENVS 330 Environmental Pollution	
ENVS/PHYS 315 Energy and the Environment	
Or upper-level natural science elective from list below	
Select one of the following:	3
ENVS 301 Introduction to Meteorology	
ENVS 401 Meteorology and Climatology	
Or upper-level natural science elective from list below	

Select one of the following: 3

ENVS 310 Introduction to Oceanography

ENVS 411 Oceanography

Or upper-level natural science elective from list below

Select one of the following: 4

PHYS 101 Foundations of Physics

& PHYZ 101 and Foundations of Physics Laboratory

PHYS 107 Wonders of Technology

ENVS 105 Physical Geology

& URSZ 204 and Physical Geography Laboratory:  
Geomorphology and Soils

URSP 204 Physical Geography: Geomorphology  
& URSZ 204 and Soils

and Physical Geography Laboratory:  
Geomorphology and Soils

Or a 200-level or higher natural science elective and a 200-level or higher natural science laboratory elective from the list below

Select one of the following: 3-4

PHYS 103 Elementary Astronomy

BIOL 101 Biological Concepts  
& BIOZ 101 and Biological Concepts Laboratory

BIOL/ENVS 103 Environmental Science

CHEM 110 Chemistry and Society

Or a 200-level or higher natural science elective and a 200-level or higher natural science laboratory elective from the list below

Select a second introductory foundation course (with laboratory) in two of the following three areas: biology, chemistry or physics 8-10

BIOL 151 Introduction to Biological Sciences I  
& BIOZ 151 and Introduction to Biological Science Laboratory I

BIOL 152 Introduction to Biological Sciences II  
& BIOZ 152 and Introduction to Biological Science Laboratory II

CHEM 101 General Chemistry  
& CHEZ 101 and General Chemistry Laboratory I

CHEM 102 General Chemistry  
& CHEZ 102 and General Chemistry Laboratory II

PHYS 201 General Physics

PHYS 202 General Physics

PHYS 207 University Physics I

PHYS 208 University Physics II

Select an ethics or upper-level health-related science elective from either of the lists below. 3

Select research, internship, co-op (see research experience electives list) or upper-level service-learning experience (to equal a minimum of three credits alone or in combination with other upper-level natural or health science electives). 3

Select two additional courses at the 200-level or higher in mathematics, science, teaching mathematics and/or science with adviser's approval. Choose from the following: 5-6

EDUS 300 Foundations of Education (may be used if student is preparing for teaching)

EDUS 301 Human Development and Learning (may be used if student is preparing for teaching)

LFSC/RELS 401 Faith and Life Sciences

MATH or STAT: 200-level or higher

Or a 200-level or higher natural or health science elective from list below

Total Hours 64-72

## Open electives

Select two-24 open elective credits 2-24

Total Hours 2-24

## Total minimum requirement 120 credits

### Natural science electives

LFSC 301 Integrative Life Sciences Research 3

LFSC 401 Faith and Life Sciences 3

PHTX 400 Drugs and their Actions 3

Any 200-level or higher BIOL, BNFO, CHEM, CLSE, EGRB, ENVS, FRSC, INSC or PHYS course, except:

BIOL 220

BIOL 292

BIOL 392 Introduction to Research

BIOL 475 Biology Capstone Seminar: \_\_\_\_

BIOL 477 Biology Capstone Experience

BIOL 489 Communicating Research

BIOL 490 Presenting Research

BIOL 492 Independent Study

BIOL 493 Biology Internship

BIOL 495 Research and Thesis

BIOL 496 Biology Preceptorship

BNFO 292 Independent Study

BNFO 492 Independent Study

BNFO 496 Undergraduate Teaching Assistantship in Bioinformatics

CHEM 392 Directed Study

CHEM 492 Independent Study

CHEM 493 Chemistry Internship

ENGR 490 Engineering Seminar

ENGR 492 Independent Study in Engineering

ENVS 490 Research Seminar in Environmental Studies

ENVS 492 Independent Study

ENVS 493 Environmental Studies Internship

FRSC 490 Professional Practices in Forensic Science

FRSC 492 Forensic Science Independent Study

FRSC 493 Forensic Science Internship

INSC 490 Capstone Research Experience in Interdisciplinary Science

PHYS 490 Seminar in Conceptual Physics

PHYS 492 Independent Study



**Natural science laboratory electives**

BIOL 205	Basic Human Anatomy <sup>1</sup>	4
BIOL 302	<sup>1</sup>	5
BIOL 309	Entomology <sup>1</sup>	4
BIOL 320	Biology of the Seed Plant <sup>1</sup>	4
BIOL 402	Comparative Vertebrate Anatomy <sup>1</sup>	5
BIOL 417	Mammalogy <sup>1</sup>	4
BIOL 435	Herpetology <sup>1</sup>	3
BIOL 445	Neurobiology and Behavior <sup>1</sup>	4
BIOL 503	Fish Biology <sup>1</sup>	4
BIOZ: any 200-level or higher course		
BNFO 380	Introduction to Mathematical Biology <sup>1</sup>	4
BNFO 420	Applications in Bioinformatics <sup>1</sup>	3
BNFO 440	Computational Methods in Bioinformatics <sup>1</sup>	3
CHEZ: any 200-level or higher course		
EGRB 307	Biomedical Instrumentation <sup>1</sup>	4
EGRB 308	Biomedical Signal Processing <sup>1</sup>	4
EGRB 310	Biomechanics <sup>1</sup>	4
ENVZ 335	Environmental Geology Laboratory	1
FRSZ: any 200-level or higher course		
PHIZ 206	Human Physiology Laboratory	1
PHYS 202	General Physics <sup>1</sup>	4
PHYS 208	University Physics II <sup>1</sup>	5
PHYZ 320	Modern Physics Laboratory	1
URSZ 203	Physical Geography Laboratory: Weather, Climate and Biogeography	1

<sup>1</sup> Courses have a combined lecture and lab and will satisfy both natural science lecture and laboratory requirements.

**Health science electives**

AFAM/ANTH/INTL/ GSWS 309	Global Women's Health	3
AFAM 310	African American Health: Health Disparities	3
AFAM 401	African-Americans and the U.S. Health Care System	3
HPEX 325	Pathology and Pharmacology in Athletic Training	3
HPEX 345	Nutrition for Health and Disease	3
HPEX 350	Nutrition	3
HPEX 353	Disease Trends, Prevention and Control	3
HPEX 373	Structural Kinesiology	3
HPEX 374	Musculoskeletal Structure and Movement	4
HPEX 375	Physiology of Exercise	3
HPEX 440	Chronic Disease and Exercise Management	3
PSYC 401	Physiological Psychology	3
PSYC 412	Health Psychology	3
PSYC/GSWS 414	Psychology of Women's Health	3
SCTS 300	Introduction to Science and Technology Studies	3
SCTS 301	Illness Narratives	3

SCTS 392	Revolutions in Science I	3
SCTS 393	Revolutions in Science II	3
SCTS 397	Genetics and Society: 1865 to the Present	3
SCTS 398	History of Medicine and Public Health: _____	3
SOCY 445	Medical Sociology	3
GSWS 392	Women's Health Care Across the Life Span	3

**Ethics electives**

LFSC/RELS 401	Faith and Life Sciences	3
PHIL 201	Critical Thinking About Moral Problems	3
PHIL 211	History of Ethics	3
PHIL 212	Ethics and Applications	3
PHIL 213	Ethics and Health Care	3
PHIL 214	Ethics and Business	3
RELS 340/INTL 341	Global Ethics and the World's Religions	3
SOCY 445	Medical Sociology	3

**Research, internship, co-op experience electives**

AFAM 399	Interdisciplinary Research Methods	3
ANTH 303	Archaeological Methods and Research Design	3
BIOL 490	Presenting Research	1
BIOL 492	Independent Study	1-4
BIOL 493	Biology Internship	1-3
CHEM 492	Independent Study	1-4
CHEM 493	Chemistry Internship	1-3
COOP 298	Cooperative Education Experience	0
COOP 398	Cooperative Education Experience	0
FRSC 492	Forensic Science Independent Study	1-3
FRSC 493	Forensic Science Internship	3
PHYS 492	Independent Study	1-3
PSYC 317	Experimental Methods	3
SOCY 320	Research Methods in the Social Sciences	3

**Natural science approved capstone courses**

BIOL 475	Biology Capstone Seminar: _____	1-3
BIOL 477	Biology Capstone Experience (in conjunction with BIOL 492, BIOL 493, BIOL 495 or BIOL 497, as specified and approved by the biology department)	0
BIOZ 476	Biology Capstone Laboratory	2
BNFO 420	Applications in Bioinformatics	3
CHEM 398	Professional Practices and Perspectives Seminar	1
CLSE 402 & CLSE 403	Senior Design Studio I (Laboratory/Project Time) and Senior Design Studio II (Laboratory/Project Time)	4
EGRB 402	Biomedical Engineering Senior Design Studio	3

ENVS 490	Research Seminar in Environmental Studies	3
FRSC 490	Professional Practices in Forensic Science	3
PHYS 490	Seminar in Conceptual Physics	1

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
Select one of the following CHEM sequences:		3-4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	-
CHEM 110	Chemistry and Society	-
MATH 151	Precalculus Mathematics (or placement)	4
STAT 208 or STAT 210	Statistical Thinking or Basic Practice of Statistics	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Term Hours:		14-15

### Spring semester

Select one of the following sequences:		4-5
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	-
BIOL 103 or ENVS 103	Environmental Science or Environmental Science	-
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	-
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	-
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	-
PHYS 101 & PHYZ 101	Foundations of Physics and Foundations of Physics Laboratory	-
PHYS 107	Wonders of Technology	-
PHYS 201	General Physics	-
PHYS 207	University Physics I	-
HUMS 202	Choices in a Consumer Society	1
MATH 200 or SCMA 212 or STAT 314	Calculus with Analytic Geometry or Differential Calculus and Optimization for Business or Applications of Statistics	3-4
UNIV 112	Focused Inquiry II	3
Approved diverse and global communities		3
Term Hours:		14-16

### Sophomore year

Fall semester		Hours
Select one of the following BIOL sequences:		4

BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory	-
BIOL 103 or ENVS 103	Environmental Science or Environmental Science	-
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	-
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	-
Select one of the following PHYS sequences:		4-5
PHYS 101 & PHYZ 101	Foundations of Physics and Foundations of Physics Laboratory	-
PHYS 107	Wonders of Technology	-
PHYS 202	General Physics	-
PHYS 208	University Physics II	-
UNIV 200	Inquiry and the Craft of Argument	3
Approved General Education elective		3
Approved human, social and political behavior		3
Term Hours:		17-18

### Spring semester

Select one of the following combinations or a 200-level science with laboratory:		4
ENVS 105 & URSZ 204	Physical Geology and Physical Geography Laboratory: Geomorphology and Soils	-
URSP 204 & URSZ 204	Physical Geography: Geomorphology and Soils and Physical Geography Laboratory: Geomorphology and Soils	-
Select a second introductory foundation course (with laboratory) in one of the following three areas: biology, chemistry or physics		4
Approved literature and civilization		3
Approved science and technology (BIOL/Z 101, BIOL/Z 103, CHEM 110 and PHYS/Z 103 also fulfill major requirements)		4
Experiential fine arts (SPCH 321, ARTE 301 or other upper-level option recommended)		1-3
Term Hours:		16-18

### Junior year

Fall semester		Hours
Select one of the following or upper-level science:		3
INSC 300	Experiencing Science	-
ENVS 368 or ENGL 368	Nature Writing or Nature Writing	-
PHYS 103	Elementary Astronomy	3
PHYZ 103	Elementary Astronomy Laboratory (or Introduction to Pre-Health topics course, or a 200-level science with laboratory)	1
Approved General Education elective		3-4
Ethics or other health-related science		3

Foreign language (101), upper-level open elective or minor elective	3-4
Term Hours:	16-18

**Spring semester**

Select one of the following:	3
BIOL 317 Ecology	-
BIOL 332 Environmental Pollution or ENVS or Environmental Pollution 330	-
ENVS 315 Energy and the Environment or PHYS or Energy and the Environment 315	-
ENVS 310 Introduction to Oceanography or ENVS or Oceanography 411	3
Additional course at the 200-level or higher in mathematics, science, teaching mathematics and/or science with adviser's approval	3
Foreign language (102), upper-level open elective or minor elective	3-4
Upper-level open elective or minor elective	3
Term Hours:	15-16

**Senior year****Fall semester**

BIOL 341 Human Evolution or ANTH or Human Evolution 301	3
ENVS 301 Introduction to Meteorology or ENVS or Meteorology and Climatology 401	3
Additional course at the 200-level or higher in mathematics, science, teaching mathematics and/or science with adviser's approval	3
Select a second introductory foundation course (with laboratory) in a second of the following three areas: biology, chemistry or physics	4
Upper-level open elective or minor elective	1-2
Term Hours:	14-15

**Spring semester**

Select one of the following:	1-3
INSC 490 Capstone Research Experience in Interdisciplinary Science	-
Or approved capstone from another science major (biology, chemistry or physics)	-
Research, internship, co-op or upper-level service-learning experience	3
Upper-level open electives or minor electives	10-11
Term Hours:	14-17

Total Hours: 120-133

## Richard T. Robertson School of Media and Culture

901 West Main Street  
Temple Building, Room 2216  
P.O. Box 842034

Richmond, Virginia 23284-2034  
Phone: (804) 828-2660  
Fax: (804) 828-9175  
robertson.vcu.edu (<http://www.robertson.vcu.edu>)

**Hong Cheng, Ph.D.**

Professor and director

**Jeff South**

Associate professor and director of undergraduate studies

**June Nicholson**

Professor and director of graduate studies

**Natasha Long**

Coordinator of student services

The Robertson School of Media and Culture prepares effective and skilled communicators through quality instruction, advising and student services, based on real-world applications. Through research, professional service and scholarship in applied communications, the school advances the knowledge and practice of a multidisciplinary and evolving media environment. The school values truth, ethics, creativity, innovation, collaboration, cultural diversity, shared governance and community engagement.

The school offers a Bachelor of Science in Mass Communications with specialization in one of three sequences: advertising, journalism and public relations. The school also awards the Master of Science in Mass Communications, with concentrations in the areas of integrated PR and advertising, multimedia journalism, and strategic public relations.

## Undergraduate information

### Admission guidelines and requirements

Incoming students can declare mass communications as their major through the last day of add/drop. VCU students in other programs who wish to declare mass communications as their major must complete MASC 101 with a minimum grade of C and have a minimum cumulative GPA of 2.5. In addition, students planning to major in advertising must complete MASC 201 with a minimum grade of C; and students planning to major in public relations must complete MASC 210 with a minimum grade of C.

Full-time students can spend no more than two academic years in the foundation from the time of enrollment. If they have not advanced to a concentration, then they will be separated from the major.

Admittance to a concentration in the Robertson School of Media and Culture is contingent on meeting the following requirements: an overall minimum GPA of 2.5 in all courses and completion of the required mass communications foundation courses. Transfer students will be evaluated on an individual basis but generally will be required to meet the prerequisites for admission during the second semester they are enrolled at VCU.

Once admitted to a concentration, students must maintain a minimum cumulative and major GPA of 2.5. If a student's GPA falls below 2.5, he or she will have one year to meet the GPA requirement. Students who fail to do so will be separated from the program. This does not preclude the student from completing another major at VCU.

Certification of these requirements must accompany a formal petition for admission to a concentration. At this time, the student must select a specialization in one of the school's concentrations: advertising,

journalism or public relations. Students selecting the advertising concentration must choose either the advertising/creative or advertising/strategic concentration. Students selecting the journalism concentration must choose either the journalism/broadcast or journalism/print-online concentration.

Students who have been separated from the major may appeal to the school's Undergraduate Studies Committee by following the process described on the school's website.

## Mass Communications Scholars Program

The Mass Communication Scholars Program demands a rigorous course load and a high GPA. It prepares students for professional positions in the communications fields and for competitive post-graduate programs. The program supports the highest standards of excellence in education and is designed to enhance the education achievement of students through a variety of special opportunities, demands and programs.

The Mass Communication Scholars Program is open to undergraduate mass communications majors who have been accepted into the VCU Honors College.

To graduate as Mass Communications Scholars, students must:

- Maintain an overall 3.5 GPA and a 3.5 GPA in the major.
- Maintain good standing in the VCU Honors College.
- Complete 18 credit hours in honors courses or "variants." At least 15 of these honors credits must be taken in the school. At least three honors credits must be completed each academic year.
- Attend at least four Honors-speakers events or colloquia each academic year for exchange of ideas.
- Complete a capstone, three-credit thesis or project course, MASC 492.
- Complete an approved international component.
- Compile a dossier or portfolio of their work to document their educational career, major, interests and scholarly pursuits. The dossier will include an essay on how the student has become a well-educated individual deserving of Mass Communications Scholars designation.

The Robertson School of Media and Culture will offer at least two honors courses or "variants" per year. Variants are courses in which students may receive honors credit while in non-honors courses by meeting additional requirements such as more advanced readings, greater depth in research or project work or additional assignments as deemed appropriate by the instructor (and approved by the Honors College).

The Mass Communications Scholars Program is a departmental honors program linked to the VCU Honors College. Mass communications students will be able to graduate with mass communications honors and with university honors. Mass Communications Scholars will earn a distinctive designation at their graduation ceremony.

Honors courses and courses designated as variants will be listed in the Schedule of Classes for each semester. Students wishing to enter the Mass Communications Scholars Program should contact the program coordinator.

- Mass Communications, Bachelor of Science (B.S.) with a concentration in:
  - Advertising/creative (p. 201)
  - Advertising/strategic (p. 203)

- Journalism/broadcast (p. 205)
- Journalism/print-online (p. 207)
- Public relations (p. 209)

- Media studies, minor in (p. 211)

## Mass Communications, Bachelor of Science (B.S.) with a concentration in advertising/creative

The Richard T. Robertson School of Media and Culture offers a Bachelor of Science in Mass Communications with concentrations in one of three areas: advertising, journalism or public relations. The concentration in advertising prepares students for careers at advertising agencies, marketing departments of corporations or service organizations and media companies.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Write correctly and clearly in forms and styles appropriate for the communication professions, audiences and purposes they serve.
- Conduct research and evaluate information by methods appropriate to the communication professions in which they work.
- Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness.
- Apply tools and technologies appropriate for the communication professions in which they work.
- Apply basic numerical and statistical concepts.
- Think critically, creatively and independently.
- Demonstrate an understanding of the history and role of professionals and institutions in shaping communications.
- Understand and apply the principles and laws appropriate to the communication professions in which they work, including copyright and trademark law.
- Demonstrate an understanding of the diversity of groups in a global society in relationship to communications.
- Demonstrate an understanding of professional ethical principles and work ethically.
- Understand concepts and apply theories in the use and presentation of images and information

## Special requirements

The **overview section** of the Robertson School of Media and Culture explains the requirements for students to be admitted to, and remain in, the foundation program or a specific concentration in the school.

Students must earn at least 72 credits in courses outside mass communications. In addition, students must earn a total of 45 credits in classes at the 300-level and above, including upper-level mass communications course work. To graduate from the mass communications program, students must have a cumulative and major GPA of 2.5 and must earn a minimum grade of C in their senior-level capstone courses (MASC 451 and MASC 481). The mass communications curriculum includes the foundation and specific concentrations.

## Foundation course work for advertising students

MASC 101; MASC 201; MASC 204 with a minimum grade of C; and completion of UNIV 111, UNIV 112, ECON 203 and the College of Humanities and Sciences' human, social and political behavior; math and statistics (must choose STAT 208 or STAT 210); science and technology; and diverse and global communities requirements. Completion of both ECON 210 and ECON 211 may substitute for ECON 203.

To enroll in MASC 203 or MASC 204, students must receive departmental permission.

To enroll in a mass communications course, majors must have earned a minimum grade of C in all courses prerequisite for that course.

## Degree requirements for Mass Communications, Bachelor of Science (B.S.) with a concentration in advertising/creative

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

ARTH 104	Survey of Art II (fulfills experiential fine arts requirement)	3
----------	--	---

ECON 203	Introduction to Economics (completion of both ECON 210 and ECON 211 satisfies this requirement)	3
HIST 103 & HIST 104	Survey of American History and Survey of American History	6
MKTG 301	Marketing Principles (ACCT 202, ACCT 203 or ACCT 204 will also satisfy this requirement)	3
STAT 208	Statistical Thinking (fulfills University Core quantitative literacy)	3
or STAT 210	Basic Practice of Statistics	
POLI or URSP course (300-level or above)		3
Literature course (300-level or above) except ENGL 386 / TEDU 386 or ENGL 387		3
Total Hours		24

### Major requirements

MASC 101	Mass Communications	3
MASC 201	Curiousness	3
MASC 204	Story	3
or MASC 203	Journalism Writing	
MASC 300	Technical Prowess	3
MASC 380	History of Advertising	3
MASC 392	Perspicuousness	3
MASC 394	Imagination	3
MASC 409	Truth and Honor	3
or MASC 408	Communications Ethics and Law	
MASC 450	Style	3
MASC 451	Invention	3
MASC 481	Completeness	3
MASC electives		6
Total Hours		39

### Open electives

Select 11-25 open elective credits	11-25
------------------------------------	-------

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
MASC 101	Mass Communications	3
MATH 131 or MATH 141	Introduction to Contemporary Mathematics or Algebra with Applications	3
UNIV 111	Focused Inquiry I	3
Approved human, social and political behavior		3-4
Approved literature and civilization (ENGL 215 Textual Analysis recommended)		3
Term Hours:		15-16

#### Spring semester

HUMS 202	Choices in a Consumer Society	1
MASC 201	Curiousness	3



STAT 208	Statistical Thinking	3
UNIV 112	Focused Inquiry II	3
Approved science and technology		3-4
Term Hours:		13-14

**Sophomore year****Fall semester**

ARTH 104	Survey of Art II	3
ECON 203	Introduction to Economics (or ECON 210 or 211 if other of these two has been completed)	3
HIST 103	Survey of American History	3
MASC 204	Story	3
Foreign language (101-level)		4
Term Hours:		16

**Spring semester**

HIST 104	Survey of American History	3
MASC 300	Technical Prowess	3
MASC 380	History of Advertising	3
UNIV 200	Inquiry and the Craft of Argument	3
Foreign language (102-level)		4
Term Hours:		16

**Junior year****Fall semester**

MASC 392	Perspicuousness	3
MASC 394	Imagination	3
Approved diverse and global communities		3
Approved General Education elective		3-4
Literature course (300-level or above) except ENGL/TEDU 386 Children's Literature I or ENGL 387 Literature for Adolescents		3
Term Hours:		15-16

**Spring semester**

MASC 450	Style	3
MKTG 301	Marketing Principles (ACCT 202, 203 or 204 will also satisfy this requirement)	3
MASC elective (300-400 level)		3
POLI or URSP course (300-level or above)		3
Approved General Education elective		3-4
Term Hours:		15-16

**Senior year****Fall semester**

MASC 409	Truth and Honor	3
or MASC 408	or Communications Ethics and Law	
MASC 451	Invention	3
Open elective (300-400 level)		3
Open electives		6
Term Hours:		15

**Spring semester**

MASC 481	Completeness	3
MASC elective (300-400 level)		3
Open elective		3

Open electives (300-400 level)	6
Term Hours:	15
Total Hours:	120-124

## Mass Communications, Bachelor of Science (B.S.) with a concentration in advertising/strategic

The Richard T. Robertson School of Media and Culture offers a Bachelor of Science in Mass Communications with concentrations in one of three areas: advertising, journalism or public relations. The concentration in advertising prepares students for careers at advertising agencies, marketing departments of corporations or service organizations and media companies.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Write correctly and clearly in forms and styles appropriate for the communication professions, audiences and purposes they serve.
- Conduct research and evaluate information by methods appropriate to the communication professions in which they work.
- Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness.
- Apply tools and technologies appropriate for the communication professions in which they work.
- Apply basic numerical and statistical concepts.
- Think critically, creatively and independently.
- Demonstrate an understanding of the history and role of professionals and institutions in shaping communications.
- Understand and apply the principles and laws appropriate to the communication professions in which they work, including copyright and trademark law.
- Demonstrate an understanding of the diversity of groups in a global society in relationship to communications.
- Demonstrate an understanding of professional ethical principles and work ethically.
- Understand concepts and apply theories in the use and presentation of images and information.

### Special requirements

The overview section (p. 200) of the Robertson School of Media and Culture explains the requirements for students to be admitted to, and remain in, the foundation program or a specific concentration in the school.

Students must earn at least 72 credits in courses outside mass communications. In addition, students must earn a total of 45 credits in classes at the 300-level and above, including upper-level mass communications course work. To graduate from the mass communications program, students must have a cumulative and major GPA of 2.5 and must earn a minimum grade of C in their senior-level capstone courses (MASC 459 and MASC 481). The mass communications curriculum includes the foundation and specific concentrations.

## Foundation course work for advertising students

MASC 101; MASC 201; MASC 204 with a minimum grade of C; and completion of UNIV 111, UNIV 112, ECON 203 and the College of Humanities and Sciences' human, social and political behavior; math and statistics (must choose STAT 208 or STAT 210); science and technology; and diverse and global communities requirements. Completion of both ECON 210 and ECON 211 may substitute for ECON 203.

To enroll in MASC 203 or MASC 204, students must receive departmental permission.

To enroll in a mass communications course, majors must have earned a minimum grade of C in all courses prerequisite for that course.

## Degree requirements for Mass Communications, Bachelor of Science (B.S.) with a concentration in advertising/strategic

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play	Focused Inquiry I	3
course video for Focused Inquiry I		
UNIV 112 Play	Focused Inquiry II	3
course video for Focused Inquiry II		
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

ARTH 104	Survey of Art II (fulfills experiential fine arts requirement)	3
----------	--	---

ECON 203	Introduction to Economics (completion of both ECON 210 and ECON 211 satisfies this requirement)	3
HIST 103 & HIST 104	Survey of American History and Survey of American History	6
MKTG 301	Marketing Principles (ACCT 202, ACCT 203 or ACCT 204 will also satisfy this requirement)	3
STAT 208	Statistical Thinking (fulfills University Core quantitative literacy)	3
or STAT 210	Basic Practice of Statistics	
POLI or URSP course (300-level or above)		3
Literature course (300-level or above) except ENGL 386 / TEDU 386 or ENGL 387		3
Total Hours		24

### Major requirements

MASC 101	Mass Communications	3
MASC 201	Curiousness	3
MASC 204	Story	3
or MASC 203	Journalism Writing	
MASC 380	History of Advertising	3
MASC 398	Awareness	3
MASC 399	Empathy	3
MASC 409	Truth and Honor	3
or MASC 408	Communications Ethics and Law	
MASC 459	Judgment	3
MASC 481	Completeness	3
MASC 493	Fieldwork/Internship	3
MASC electives		9
Total Hours		39

### Open electives

Select 11-25 open elective credits	11-25
------------------------------------	-------

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester	Hours
MASC 101 Mass Communications	3
MATH 131 Introduction to Contemporary Mathematics or MATH 141 or Algebra with Applications	3
UNIV 111 Focused Inquiry I	3
Approved human, social and political behavior	3-4
Approved literature and civilization (ENGL 215 Textual Analysis recommended)	3
Term Hours:	15-16

#### Spring semester

HUMS 202 Choices in a Consumer Society	1
MASC 201 Curiousness	3

STAT 208	Statistical Thinking	3
UNIV 112	Focused Inquiry II	3
Approved science and technology		3-4
Term Hours:		13-14

**Sophomore year****Fall semester**

ARTH 104	Survey of Art II	3
ECON 203	Introduction to Economics (or ECON 210 or 211 if other of these two has been completed)	3
HIST 103	Survey of American History	3
MASC 204	Story	3
Foreign language (101-level)		4
Term Hours:		16

**Spring semester**

HIST 104	Survey of American History	3
MASC 380	History of Advertising	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved diverse and global communities		3
Foreign language (102-level)		4
Term Hours:		16

**Junior year****Fall semester**

MASC 398	Awareness	3
MASC 399	Empathy	3
Approved General Education elective		3-4
Literature course (300-level or above) except ENGL/TEDU 386 Children's Literature I or ENGL 387 Literature for Adolescents		3
Open elective		3
Term Hours:		15-16

**Spring semester**

ACCT 202	Accounting for Non-business Majors	3
or MKTG 301	or Marketing Principles	
MASC electives (300-400 level)		6
POLI or URSP course (300-level or above)		3
Approved General Education elective		3-4
Term Hours:		15-16

**Senior year****Fall semester**

MASC 409	Truth and Honor	3
or MASC 408	or Communications Ethics and Law	
MASC 459	Judgment	3
Open elective (300-400 level)		3
Open electives		6
Term Hours:		15

**Spring semester**

MASC 481	Completeness	3
MASC 493	Fieldwork/Internship	3
MASC elective (300-400 level)		3
Open elective		3

Open elective (300-400 level)	3
Term Hours:	15
Total Hours:	120-124

## Mass Communications, Bachelor of Science (B.S.) with a concentration in journalism/broadcast

The Richard T. Robertson School of Media and Culture offers a Bachelor of Science in Mass Communications with concentrations in one of three areas: advertising, journalism or public relations. The journalism concentration provides students with the skills and practice necessary for careers in the news media.

### Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Write correctly and clearly in forms and styles appropriate for the communication professions, audiences and purposes they serve.
- Conduct research and evaluate information by methods appropriate to the communication professions in which they work.
- Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness.
- Apply tools and technologies appropriate for the communication professions in which they work.
- Apply basic numerical and statistical concepts.
- Think critically, creatively and independently.
- Demonstrate an understanding of the history and role of professionals and institutions in shaping communications.
- Understand and apply the principles and laws appropriate to the communication professions in which they work, including copyright and trademark law.
- Demonstrate an understanding of the diversity of groups in a global society in relationship to communications.
- Demonstrate an understanding of professional ethical principles and work ethically.
- Understand concepts and apply theories in the use and presentation of images and information.

### Special requirements

The **overview section** of the Robertson School of Media and Culture explains the requirements for students to be admitted to, and remain in, the foundation program or a specific concentration in the school.

Students must earn at least 72 credits in courses outside mass communications. In addition, students must earn a total of 45 credits in classes at the 300-level and above, including upper-level mass communications course work. To graduate from the mass communications program, students must have a cumulative and major GPA of 2.5 and must earn a minimum grade of C in their senior-level capstone courses. The mass communications curriculum includes the foundation and specific concentrations.

### Foundation course work for journalism students

MASC 101; MASC 203 with a minimum grade of C; and completion of UNIV 111, UNIV 112, POLI 103, ECON 203 and the College of

Humanities and Sciences' math and statistics (must choose STAT 208), science and technology and diverse and global communities requirements. Completion of both ECON 210 and ECON 211 may substitute for ECON 203.

To enroll in MASC 203, students must receive departmental permission.

To enroll in a mass communications course, majors must have earned a minimum grade of C in all courses prerequisite for that course.

## Degree requirements for Mass Communications, Bachelor of Science (B.S.) with a concentration in journalism/broadcast

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

ECON 203	Introduction to Economics (completion of both ECON 210 and ECON 211 Economic Principles satisfies this requirement)	3
HIST 103 & HIST 104	Survey of American History and Survey of American History	6
POLI 103	U.S. Government (fulfills approved human, social and political behavior)	3

STAT 208	Statistical Thinking (fulfills University Core quantitative literacy)	3
or STAT 210	Basic Practice of Statistics	
POLI or URSP course (300-level or above)		3
History course (300-level or above)		3
Literature course (300-level or above) except ENGL 386 / TEDU 386 or ENGL 387		3
Total Hours		24

### Major requirements

MASC 101	Mass Communications	3
MASC 203	Journalism Writing	3
MASC 303	Reporting for Print and Web	3
MASC 361	History and Development of Journalism	3
MASC 363	Introduction to Broadcast Writing	3
MASC 367	Audio and Video Journalism	3
MASC 408	Communications Ethics and Law	3
MASC 415	Advanced Video Journalism	3
MASC 460	Advanced Television Newsgathering	3
MASC 461	The Documentary (capstone courses)	3
or MASC 465	Newscasting	
MASC 493	Fieldwork/Internship	3
MASC elective		3
Total Hours		36

### Open electives

Select 14-28 open elective credits	14-28
------------------------------------	-------

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
MASC 101	Mass Communications	3
MATH 131	Introduction to Contemporary Mathematics	3
or MATH 141	or Algebra with Applications	
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved diverse and global communities		3
Term Hours:		13

#### Spring semester

ECON 203	Introduction to Economics (or ECON 201 or ECON 211 if other of these two has been completed)	3
HUMS 202	Choices in a Consumer Society	1
POLI 103	U.S. Government (must take for approved H&S human, social and political behavior)	3
UNIV 112	Focused Inquiry II	3
Approved science and technology		3-4
Open elective		2-3
Term Hours:		15-17

**Sophomore year****Fall semester**

HIST 103	Survey of American History	3
MASC 203	Journalism Writing	3
STAT 208 or STAT 210	Statistical Thinking or Basic Practice of Statistics	3
Approved General Education elective		3
Approved literature and civilization (ENGL 215 Textual Analysis recommended)		3
Term Hours:		15

**Spring semester**

HIST 104	Survey of American History	3
MASC 363	Introduction to Broadcast Writing	3
MASC 367	Audio and Video Journalism	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved General Education elective		3-4
Term Hours:		15-16

**Junior year****Fall semester**

MASC 303	Reporting for Print and Web	3
MASC 361	History and Development of Journalism	3
Foreign language (101-level)		4
History course (300-level or above)		3
Open elective		3
Term Hours:		16

**Spring semester**

MASC 415	Advanced Video Journalism	3
MASC 460	Advanced Television Newsgathering	3
POLI or URSP course (300-level or above)		3
Foreign language (102-level)		4
Open elective		3
Term Hours:		16

**Senior year****Fall semester**

MASC 408	Communications Ethics and Law	3
MASC 461 or MASC 465	The Documentary or Newscasting	3
Open elective		3
Open elective (300-400 level)		6
Term Hours:		15

**Spring semester**

MASC 493	Fieldwork/Internship	3
Literature course (300-level or above) except ENGL/TEDU 386 Children's Literature I or ENGL 387 Literature for Adolescents		3
MASC elective		3
Open elective		3
Open elective (300-400 level)		3
Term Hours:		15
Total Hours:		120-123

## Mass Communications, Bachelor of Science (B.S.) with a concentration in journalism/print-online

The Richard T. Robertson School of Media and Culture offers a Bachelor of Science in Mass Communications with concentrations in one of three areas: advertising, journalism or public relations. The journalism concentration provides students with the skills and practice necessary for careers in the news media.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Write correctly and clearly in forms and styles appropriate for the communication professions, audiences and purposes they serve.
- Conduct research and evaluate information by methods appropriate to the communication professions in which they work.
- Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness.
- Apply tools and technologies appropriate for the communication professions in which they work.
- Apply basic numerical and statistical concepts.
- Think critically, creatively and independently.
- Demonstrate an understanding of the history and role of professionals and institutions in shaping communications.
- Understand and apply the principles and laws appropriate to the communication professions in which they work, including copyright and trademark law.
- Demonstrate an understanding of the diversity of groups in a global society in relationship to communications.
- Demonstrate an understanding of professional ethical principles and work ethically.
- Understand concepts and apply theories in the use and presentation of images and information.

### Special requirements

The **overview section** of the Robertson School of Media and Culture explains the requirements for students to be admitted to, and remain in, the foundation program or a specific concentration in the school.

Students must earn at least 72 credits in courses outside mass communications. In addition, students must earn a total of 45 credits in classes at the 300-level and above, including upper-level mass communications course work. To graduate from the mass communications program, students must have a cumulative and major GPA of 2.5 and must earn a minimum grade of C in their senior-level capstone courses. The mass communications curriculum includes the foundation and specific concentrations.

### Foundation course work for journalism students

MASC 101; MASC 203 with a minimum grade of C; and completion of UNIV 111, UNIV 112, POLI 103, ECON 203 and the College of Humanities and Sciences' math and statistics (must choose STAT 208), science and technology and diverse and global communities requirements. Completion of both ECON 210 and ECON 211 may substitute for ECON 203.



To enroll in MASC 203, students must receive departmental permission.

To enroll in a mass communications course, majors must have earned a minimum grade of C in all courses prerequisite for that course.

## Degree requirements for Mass Communications, Bachelor of Science (B.S.) with a concentration in journalism/print-online

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

ECON 203	Introduction to Economics (completion of both ECON 210 and ECON 211 Economic Principles satisfies this requirement)	3
HIST 103 & HIST 104	Survey of American History and Survey of American History	6
POLI 103	U.S. Government (fulfills approved human, social and political behavior)	3
STAT 208 or STAT 210	Statistical Thinking (fulfills University Core quantitative literacy) Basic Practice of Statistics	3
POLI or URSP course (300-level or above)		3
History course (300-level or above)		3

Literature course (300-level or above) except ENGL 386 / TEDU 386 or ENGL 387	3
Total Hours	24

### Major requirements

MASC 101	Mass Communications	3
MASC 203	Journalism Writing	3
MASC 301	Graphics for Journalism	3
MASC 303	Reporting for Print and Web	3
MASC 305	Copy Editing	3
MASC 361	History and Development of Journalism	3
MASC 363	Introduction to Broadcast Writing	3
MASC 367	Audio and Video Journalism	3
MASC 408	Communications Ethics and Law	3
MASC 493	Fieldwork/Internship	3
Select two of the following capstone courses: <sup>1</sup>		6
MASC 403	Advanced Reporting	
MASC 404	Specialized Project Reporting	
MASC 475	Capital News Service	
MASC 496	Mobile and Social Media Journalism	
Total Hours		36

<sup>1</sup> These capstone courses may not be taken simultaneously without permission from the instructor.

### Open electives

Select 14-28 open elective credits	14-28
------------------------------------	-------

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester	Hours
MASC 101 Mass Communications	3
MATH 131 Introduction to Contemporary Mathematics or MATH 141 or Algebra with Applications	3
UNIV 101 Introduction to the University	1
UNIV 111 Focused Inquiry I	3
Approved diverse and global communities	3
Term Hours:	13

#### Spring semester

ECON 203 Introduction to Economics (or ECON 210 or ECON 211 if other of these two has been completed)	3
HUMS 202 Choices in a Consumer Society	1
POLI 103 U.S. Government (fulfills approved human, social and political behavior)	3
UNIV 112 Focused Inquiry II	3
Approved science and technology	3-4
Open elective	3
Term Hours:	16-17

**Sophomore year****Fall semester**

HIST 103	Survey of American History	3
MASC 203	Journalism Writing	3
STAT 208 or STAT 210	Statistical Thinking or Basic Practice of Statistics	3
Approved General Education elective		3
Approved literature and civilization (ENGL 215 Textual Analysis recommended)		3
Term Hours:		15

**Spring semester**

HIST 104	Survey of American History	3
MASC 363	Introduction to Broadcast Writing	3
MASC 367	Audio and Video Journalism	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved General Education elective		3-4
Term Hours:		15-16

**Junior year****Fall semester**

MASC 301	Graphics for Journalism	3
MASC 303	Reporting for Print and Web	3
MASC 361	History and Development of Journalism	3
Foreign language (101-level)		4
History course (300-level or above)		3
Term Hours:		16

**Spring semester**

MASC 305	Copy Editing	3
MASC 403 or MASC 404 or MASC 475 or MASC 496	Advanced Reporting or Specialized Project Reporting or Capital News Service or Mobile and Social Media Journalism	3
POLI or URSP course (300-level or above)		3
Foreign language (102-level)		4
Open elective		2-3
Term Hours:		15-16

**Senior year****Fall semester**

MASC 403 or MASC 404 or MASC 475 or MASC 496	Advanced Reporting or Specialized Project Reporting or Capital News Service or Mobile and Social Media Journalism	3
MASC 408	Communications Ethics and Law	3
Open elective		3
Open electives (300-400 level)		6
Term Hours:		15

**Spring semester**

MASC 493	Fieldwork/Internship	3
----------	----------------------	---

Literature course (300-level or above) except ENGL/TEDU 386 Children's Literature I or ENGL 387 Literature for Adolescents	3
Open elective (300-400 level)	3
Open electives	6
Term Hours:	15
Total Hours:	120-123

## Mass Communications, Bachelor of Science (B.S.) with a concentration in public relations

The Richard T. Robertson School of Media and Culture offers a Bachelor of Science in Mass Communications with concentrations in one of three areas: advertising, journalism or public relations. The public relations concentration is designed to prepare students for employment in industry, government, nonprofit associations and public relations agencies.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Write correctly and clearly in forms and styles appropriate for the communication professions, audiences and purposes they serve.
- Conduct research and evaluate information by methods appropriate to the communication professions in which they work.
- Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness.
- Apply tools and technologies appropriate for the communication professions in which they work.
- Apply basic numerical and statistical concepts.
- Think critically, creatively and independently.
- Demonstrate an understanding of the history and role of professionals and institutions in shaping communications.
- Understand and apply the principles and laws appropriate to the communication professions in which they work, including copyright and trademark law.
- Demonstrate an understanding of the diversity of groups in a global society in relationship to communications.
- Demonstrate an understanding of professional ethical principles and work ethically.
- Understand concepts and apply theories in the use and presentation of images and information.

### Special requirements

The **overview section** of the Robertson School of Media and Culture explains the requirements for students to be admitted to, and remain in, the foundation program or a specific concentration in the school.

Students must earn at least 72 credits in courses outside mass communications. In addition, students must earn a total of 45 credits in classes at the 300-level and above, including upper-level mass communications course work. To graduate from the mass communications program, students must have a cumulative and major GPA of 2.5 and must earn a minimum grade of C in their senior-level

capstone courses. The mass communications curriculum includes the foundation and specific concentrations.

### Foundation course work for public relations students

MASC 101; MASC 203 with a minimum grade of C; MASC 210; and completion of UNIV 111, UNIV 112, POLI 103, ECON 203 and the College of Humanities and Sciences' math and statistics (must choose STAT 208 OR STAT 210), science and technology and diverse and global communities requirements. Completion of both ECON 210 and ECON 211 may substitute for ECON 203.

To enroll in MASC 203, students must receive departmental permission.

To enroll in a mass communications course, majors must have earned a minimum grade of C in all courses prerequisite for that course.

## Degree requirements for Mass Communications, Bachelor of Science (B.S.) with a concentration in public relations

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

ACCT 202	Accounting for Non-business Majors	3
----------	------------------------------------	---

ECON 203	Introduction to Economics (completion of both ECON 210 and ECON 211 Economic Principles satisfies this requirement)	3
HIST 103 & HIST 104	Survey of American History and Survey of American History	6
MGMT 310	Managing People in Organizations	3
MKTG 301	Marketing Principles	3
POLI 103	U.S. Government (fulfills approved human, social and political behavior)	3
STAT 208	Statistical Thinking (fulfills University Core quantitative literacy)	3
or STAT 210	Basic Practice of Statistics	
POLI or URSP course (300-level or above)		3
Literature course (300-level or above) except ENGL 386 / TEDU 386 or ENGL 387		3
Total Hours		30

### Major requirements

MASC 101	Mass Communications	3
MASC 203	Journalism Writing	3
MASC 210	Public Relations	3
MASC 333	Public Relations Writing and Media Relations	3
MASC 334	Public Relations Graphics and Production I	3
MASC 335	Public Relations Graphics and Production II	3
MASC 336	Social Media in Public Relations	3
MASC 337	Public Relations Management and Case Studies	3
MASC 338	Professionalism in Public Relations	3
MASC 408	Communications Ethics and Law	3
MASC 425	Public Relations Research	3
MASC 435	Crisis Communication	3
MASC 439	Public Relations Campaigns (capstone)	3
MASC 493	Fieldwork/Internship	3
Select public relations electives from the approved list below or any additional MASC course		6
Total Hours		48

### Open electives

Select 0-10 open elective credits	0-10
-----------------------------------	------

## Total minimum requirement 120 credits

#### Public relations electives

MASC 423	Tourism and Hospitality Public Relations	3
MASC 424	Sports and Entertainment Public Relations	3
MASC 433	Special Events	3
MASC 438	Organizational Communications	3
MASC 488	Strategic Communication of Health and Medical Issues	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
MASC 101	Mass Communications	3
POLI 103	U.S. Government (must take for approved H&S human, social and political behavior)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved science and technology		3-4
Term Hours:		13-14

### Spring semester

ECON 203	Introduction to Economics (or ECON 210 or ECON 211 if other of these two has been completed)	3
HUMS 202	Choices in a Consumer Society	1
MASC 210	Public Relations	3
UNIV 112	Focused Inquiry II	3
Approved diverse and global communities		3
General Education elective		3-4
Term Hours:		16-17

### Sophomore year

#### Fall semester

HIST 103	Survey of American History	3
MASC 203	Journalism Writing	3
STAT 208	Statistical Thinking	3
or STAT 210	or Basic Practice of Statistics	
UNIV 200	Inquiry and the Craft of Argument	3
Experiential fine arts (course offered by School of the Arts)		3
Term Hours:		15

#### Spring semester

HIST 104	Survey of American History	3
MASC 333	Public Relations Writing and Media Relations	3
MASC 337	Public Relations Management and Case Studies	3
MASC 408	Communications Ethics and Law	3
Approved literature and civilization (ENGL 215 Textual Analysis recommended)		3
Term Hours:		15

### Junior year

#### Fall semester

MASC 334	Public Relations Graphics and Production I	3
MASC 336	Social Media in Public Relations	3
MASC 338	Professionalism in Public Relations	3
Literature course (300-level or above) except ENGL/TEDU 386 or ENGL 387		3
Foreign language (101-level)		4
Term Hours:		16

#### Spring semester

MASC 335	Public Relations Graphics and Production II	3
MASC 425	Public Relations Research	3
MASC 435	Crisis Communication	3
Foreign language (102-level)		4
Public relations elective		3
Term Hours:		16

### Senior year

#### Fall semester

ACCT 202	Accounting for Non-business Majors	3
MASC 493	Fieldwork/Internship	3
MKTG 301	Marketing Principles	3
POLI or URSP course (300-level or above)		3
Public relations elective		3
Term Hours:		15

#### Spring semester

MASC 439	Public Relations Campaigns (capstone)	3
MGMT 319	Leadership	3
Approved General Education electives		3-4
Open electives		5-6
Term Hours:		14-16
Total Hours:		120-124

## Media studies, minor in

The minor in media studies consists of a minimum of 18 credits in mass communications as described below. All courses counted toward the minor must be completed with a minimum grade of C. Permission is required to enroll in all courses except MASC 101. All students in the minor in media studies program are required to register with the Robertson School of Media and Culture prior to beginning course work. Media studies course work will be distributed as follows:

#### Required courses

MASC 101	Mass Communications	3
Select one of the following:		3-6
MASC 203	Journalism Writing	
MASC 201	Curiousness	
& MASC 204	and Story	
MASC 408	Communications Ethics and Law	3

#### Elective courses

Select six to nine credits from the following:		6-9
MASC/INTL 151	Global Communications	
MASC 210	Public Relations	
MASC 300	Technical Prowess	
MASC 301	Graphics for Journalism	
MASC 334	Public Relations Graphics and Production I	
MASC 361	History and Development of Journalism	
MASC 380	History of Advertising	
MASC 474	Diversity in the Media	
MASC 491	Topics in Communications	
MASC 493	Fieldwork/Internship	

Total Hours 18

## School of World Studies

312 North Shafer Street  
P.O. Box 842021  
Richmond, Virginia 23284-2021  
Phone: (804) 827-1111  
Fax: (804) 827-3479  
worldstudies.vcu.edu (<http://www.worldstudies.vcu.edu>)

### Mark Wood, Ph.D.

Associate professor and director

### Angelina Overvold, Ph.D.

Associate professor and associate director

The School of World Studies explores what it means to be human and prepares students to participate in the work of building a healthy world community. With training in the humanities, social sciences and natural sciences, our faculty complete research on the diversity and universality of human existence and creative expression, generating a rich intellectual understanding of the evolving and dynamic nature of human beings. We consider the development, composition and interaction of language, religion, art, film, literature, poetry and culture. We also consider the relationship between these forms of human life and matters of gender, nationality, race, social justice, human rights and the environment. Our students acquire interdisciplinary knowledge, cross-cultural communication skills and global perspectives on real-world issues, and they graduate from the School of World Studies with the ability to act and live well as global citizens.

## Languages

The School of World Studies offers students significant opportunities to broaden their knowledge of diverse cultures through language study, including:

Arabic  
Biblical Hebrew  
Chinese  
French (major and minor)  
German (major and minor)  
Italian (Italian studies minor)  
Latin  
Russian (Russian studies minor)  
Spanish (major and minor)

In cases where the appropriate level of instruction is unavailable, the School of World Studies Advising Office will assist the student in identifying language study options at other U.S. institutions or abroad.

## Foreign language courses

Students planning to take a foreign language course at VCU must take the placement test in order to determine proper course selection. Specific information about the placement test (<http://www.worldstudies.vcu.edu/academics/foreign-languages/language-placement-testing>) is available on the School of World Studies website.

Students who wish to complete a language through the intermediate level or higher are required to **consecutively** complete 101, 102 and 201 or the equivalent. Students may then choose either 202 or 205 to complete the intermediate level.

## Foreign language requirement and native speaker information

All students within the College of Humanities and Sciences are required to meet a foreign language requirement either through the 102 level for the college general education program or through a higher level as specified by the individual program.

The following is the procedure to determine fluency level in respective languages:

1. **For languages currently taught at VCU** students take a placement test through School of World Studies media center.
2. **For languages not taught at VCU** students submit ACTFL oral proficiency examination results (For more information and to register for the OPI evaluation, please visit [languagetesting.com](http://www.languagetesting.com) (<http://www.languagetesting.com>)). **or** submit a copy of official high school or university transcript documenting completion of formal secondary or postsecondary study in a program taught in a language other than English.

For questions about the procedure or regarding languages not covered through the OPI test, students should contact the School of World Studies Advising Office.

## Experiential learning and study abroad

### World Passport

As part of the School of World Studies' commitment to learning through engagement, each student within the school is required to complete a World Passport to introduce him or her to a breadth of experience beyond the core curriculum: cultural opportunities, experiential learning, seminars and conferences, international experiences, and multicultural campus activities. Students are required to obtain information about their personal World Passport from the School of World Studies Advising Office. The passport will be kept in the student advising file throughout the duration of study. It will be reviewed and stamped by an SWS adviser prior to graduation, and then given to the student upon completion.

The passports **require four categories** of activities to be completed by students before graduation from VCU with a degree from the School of World Studies.

- **Professional preparation** prepares students for careers, graduate school and lifelong learning.
- **Crossing boundaries** exposes students to international and multicultural interactions and ideas.
- **Community engagement** enhances the undergraduate experience by greater involvement in the community.
- **Experiential learning** provides students the opportunity to demonstrate success in applying program content beyond a classroom setting.

The School of World Studies is committed to the premise that learning is best facilitated through engagement with the dynamic complexities and challenges of the world outside the classroom. Both majors and minors in the school are required to participate in experiential learning options. All experiential learning opportunities must receive prior approval from the SWS Advising Office and include internships, service-learning courses, certain noncredit options and study abroad.



## Study abroad

Summer study-abroad programs provide students with opportunities for short-term immersion in the language, culture and civilization of the countries they visit. A list of current VCU study abroad opportunities can be found at [global.vcu.edu/abroad](http://global.vcu.edu/abroad) (<http://www.global.vcu.edu/abroad>). VCU is a member of the International Student Exchange Program, which offers junior year abroad programs at one of 40 universities worldwide. For more information about study abroad visit the School of World Studies website at [worldstudies.vcu.edu](http://worldstudies.vcu.edu) (<http://www.worldstudies.vcu.edu>).

## World Passport completion

The instructions for successful completion of the World Passport requirements, along with a description of each of the four sections, can be found on the World Studies website at [worldstudies.vcu.edu](http://worldstudies.vcu.edu) (<http://www.worldstudies.vcu.edu>) or in the World Studies Advising Office. Students are responsible for attending appropriate events, securing documentation of attendance and meeting with their adviser to have the passport stamped as points are earned for each category. The potential events can be determined by utilizing the category descriptions noted in the passport or by visiting the SWS Calendar at [worldstudies.vcu.edu](http://worldstudies.vcu.edu) (<http://www.worldstudies.vcu.edu>) and the school's Facebook page. Evaluation of the passport is on a pass/fail basis. Should a student lose his or her passport, he or she would be required to re-create attendance at events in essay form or complete the requirement in some other way determined by the adviser or program coordinator.

- Anthropology, Bachelor of Science (B.S.) (p. 213)
- Foreign Language, Bachelor of Arts (B.A.) with a concentration in:
  - French (p. 216)
  - German (p. 218)
  - Spanish (p. 221)
- International Studies, Bachelor of Arts (B.A.) with a concentration in:
  - European studies (p. 223)
  - General studies (p. 227)
  - International social justice studies (p. 229)
  - Latin American studies (p. 233)
  - World cinema (p. 236)
- Religious Studies, Bachelor of Arts (B.A.) (p. 239)
- African studies, minor in (p. 242)
- Anthropology, minor in (p. 243)
- Arabic and Middle Eastern studies, minor in (p. 243)
- Asian and Chinese studies, minor in (p. 244)
- European studies, minor in (p. 244)
- French, minor in (p. 245)
- German, minor in (p. 245)
- International social justice studies, minor in (p. 245)
- Italian studies, minor in (p. 246)
- Latin American studies, minor in (p. 247)
- Mediterranean studies, minor in (p. 247)
- Religious studies, minor in (p. 248)
- Russian studies, minor in (p. 248)
- Spanish, minor in (p. 248)
- World cinema, minor in (p. 248)
- International Management Studies, Certificate in (Undergraduate certificate) (p. 241)
- Spanish/English Translation and Interpretation, Certificate in (Undergraduate certificate) (p. 242)

## Anthropology, Bachelor of Science (B.S.)

**Christopher Brooks, Ph.D.**

Professor and program coordinator

[worldstudies.vcu.edu/academics/anthropology](http://worldstudies.vcu.edu/academics/anthropology) (<http://worldstudies.vcu.edu/academics/anthropology>)

The Bachelor of Science in Anthropology curriculum seeks to ensure that each student develops a solid foundation in the basic principles, theories and techniques of analysis. Since students majoring in anthropology vary in their interests and career goals, the curriculum allows for a great deal of flexibility developing individual courses of study. Students who are interested in pursuing graduate studies in anthropology will usually take more than the minimum number of upper-level courses. The department provides opportunities for involvement in faculty research through its course offerings, which include independent study, internships and honors research.

The Bachelor of Science in Anthropology requires a minimum of 120 credits, with at least 38 of those credits in anthropology averaging a minimum GPA of 2.25. Students must take at least 25 credits in upper-level (300, 400 or 500) ANTH courses. However, a student with a particular anthropological interest that can be best served by courses without the ANTH prefix may suggest a relevant selection of up to six elective credits from such classes to be counted toward the major. Alternatively, in addition to the three experiential credits fulfilling collateral requirements, a maximum of six credits from internships and/or independent studies may be counted toward the elective degree requirements. A plan for such selection must be presented to and approved by the program coordinator in the student's junior year or, for those students entering the program at the junior level, at a time stipulated by the program coordinator.

In order to begin upper-level course work in any foreign language, students must have consecutively completed 101, 102, 201, and 202 or 205 courses in a respective foreign language or prove the equivalent proficiency level through placement testing.

Anthropology majors are strongly encouraged to complete a minor, preferably one offered in World Studies. Students should refer to the listing in the general description of the School of World Studies.

## Learning outcomes

- Critical-thinking skills
- Global knowledge, citizenship and ethics
- Oral communication skills
- Scientific literacy
- Advanced writing skills
- Conversant with disciplinary tenets
- Research methods and design skills
- Experiential learning
- Advanced language skills

**Upon completing this program, students will know and know how to do the following:**

The goal of the anthropology program is to impart to our students a global awareness and appreciation of the full range of human biological and cultural diversity across time and space, as well as of the underlying similarities derived from our common evolutionary origins.

Students gain proficiency in the knowledge and application of disciplinary and subdisciplinary research methods and analytic concepts, and are trained to develop a holistic and comparative perspective on the human condition, with regard to the cultural, biological, archaeological and linguistic dimensions of anthropological inquiry.

**Honors in anthropology**

Majors in the anthropology program may earn a Bachelor of Science degree with honors in anthropology. Participation in honors thesis research is available to outstanding senior majors and involves the preparation of a senior thesis during the last two semesters of the baccalaureate degree program.

In order to participate in the program, students must meet program entrance requirements, identify a project mentor and receive approval for a project proposal. Honors will be awarded following acceptance of the thesis by the Honors Thesis Committee. The committee will consist of, at a minimum, the project mentor, one other member of the anthropology faculty and one faculty member from outside of the anthropology program.

The project may involve any recognized anthropological topic, theory and/or method that promises to enhance the student’s disciplinary perspective, skills and creativity. The project may involve an extension of work initiated in a course, an entirely new project or a collaborative project with the faculty mentor. If the project is an extension of work initiated in a course or developed collaboratively with the mentor, independent, separate, substantial development of the topic in the thesis should be evident in the final product. The thesis should reflect work of high quality for a senior-level course.

Students majoring in anthropology are eligible to participate in the departmental honors program if they have maintained a minimum 3.0 overall GPA and a minimum of 3.3 GPA in the major. Application materials consist of transcripts documenting the required GPAs, a five-to-seven page proposal (including a history and description of the proposed project, an annotated bibliography of relevant sources, a work plan, and a schedule for completion of the project) and a letter of endorsement from the faculty member who has agreed to act as project mentor. Applications must be made and project approval received no later than the first two weeks of classes in the semester in which the project will commence. A departmental committee will review the application materials, meet with the candidate to discuss the project proposal as needed and render an admission decision. Once admitted, program participants will enroll in ANTH 497. The course may be included in the required hours for the major.

Students will complete six credit hours (over two sequential semesters in their senior year) in ANTH 497 and ANTH 498. The student’s work will be evaluated by the project mentor and a departmental committee at the end of the first semester (ANTH 497) and a grade will be assigned. If allowed to continue, the student will enroll in ANTH 498 the subsequent semester. At the completion of ANTH 498, the completed senior honors thesis will be submitted to the HTC following its acceptance by the faculty mentor and confirmation that the candidate has maintained the requisite GPAs.

Upon submission of the thesis, the student will make an oral presentation (to be made no later than two weeks before the end of classes) to the HTC and other faculty as deemed appropriate, summarizing the research procedures and findings. The HTC will then evaluate the thesis for the award of honors. In order to receive honors, the thesis must be evaluated as deserving of a grade of A. Whether or not honors are awarded, a final grade will be submitted for ANTH 498. The awarding of honors for the thesis will earn an Honors Certificate from the department and notation of the student’s standing as an honors graduate on the final grade transcript. Students must submit a final copy of the thesis to both the department and the VCU Libraries no later than the last day of classes.

**Undergraduate topics courses**

Topics courses in anthropology, offered as ANTH 391 and ANTH 491, are an integral part of the program and provide a rare opportunity for the advanced student. Generally these courses are restricted to a small number of students who share specialized interests in a topic that is either too advanced or too limited in its general appeal to justify its inclusion as a standard offering. At least one such course is offered each semester, and ANTH 391 and ANTH 491 can be repeated for up to a maximum of 18 total credits as long as there is no duplication of the topics.

**Independent study**

ANTH 492 is designed for advanced students capable of doing independent work on selected topics under the directions of specific faculty. Students may earn a total maximum of 12 credits in departmental independent study courses and internship credits, but may not enroll for more than six credits per semester in independent studies. Only majors in anthropology or related fields can enroll in these courses. All students entering these courses must have completed a minimum of 12 credits in anthropology and have an anthropology GPA of 3.0 or more.

**Internship**

ANTH 493 is designed for the advanced student to gain workplace experience in a local, national or international business or agency offering opportunities in anthropological field methods or research. Applications must be approved by the School of World Studies internship coordinator. Each student must work 40 clock hours per credit hour in the organization. Students may earn up to a total of six credit hours in internship as anthropology majors and a total of three credit hours of internship as anthropology minors. All students enrolling in an internship must have completed nine credits in anthropology courses at the 300 level or above and be in good academic standing with a minimum major GPA of 2.25.

Degree requirements for Anthropology, Bachelor of Science (B.S.)

**General Education requirements**

University Core Education Curriculum (minimum 21 credits)		
UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4

Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
Total Hours	21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

BIOL 101	Biological Concepts (fulfills University Core natural/physical sciences and H&S science and technology requirements)	3
MATH 151	Precalculus Mathematics (or higher numbered MATH course) (fulfills University Core quantitative literacy)	4
STAT 210	Basic Practice of Statistics (or higher numbered STAT course)	3

#### SWS World Passport

Complete the SWS World Passport

#### Experiential learning requirement

Select one of the following:		0-3
Major-specific service learning course		
Study abroad program		
Approved internship: Select one of the following:		
ANTH 398	Field Investigations in Anthropology	
ANTH 493	Anthropology Internship	
FRLG 493	World Languages Internship	
WRLD 493	World Cultures Internship	
INTL 493	International Studies Internship	
Or other pre-approved internship opportunities		
Total Hours		3-6

### Major requirements

#### Core anthropology courses <sup>1</sup>

ANTH/INTL 103	Introduction to Anthropology	3
ANTH 105/INTL 104	Introduction to Archaeology	3
Select two of the following:		6
ANTH 210	Biological Anthropology	
ANTH 220	Cultural Anthropology	
ANTH 230	Anthropological Linguistics	

ANTH 301/BIOL 341	Human Evolution	3
ANTH 302	Archaeological Theory	3
ANTH 399	Junior Seminar	1
ANTH 454	Theory in Cultural Anthropology	3
ANTH 490	Anthropology Senior Capstone	3
ANTZ 301/BIOL 341	Human Evolution Lab	1

#### ANTH electives

Select at least two courses sampling one of three elective groups that are focused on biological anthropology, archaeology or cultural/linguistic anthropology <sup>2</sup>

#### Methods requirement

Select two of the following: 6

ANTH 303	Archaeological Methods and Research Design	
ANTH 315	Field Methods and Research Design in Cultural Anthropology	
ANTH 328	Language, Culture and Cognition (methods requirement)	

Total Hours 38

<sup>1</sup> Students must attain a minimum grade of C in each of the core anthropology courses.

<sup>2</sup> An updated list of these elective courses is available through the School of World Studies, and choices should be completed with the consultation of an adviser.

### Open electives

Select 30-47 open elective credits 30-47

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
ANTH 103	Introduction to Anthropology	3
or INTL 103	or Introduction to Anthropology	
or ANTH 105	or Introduction to Archaeology	
or INTL 104	or Introduction to Archaeology	
MATH 151	Precalculus Mathematics (fulfills approved quantitative literacy)	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Foreign language (101-level)		4
Term Hours:		15

#### Spring semester

ANTH 105	Introduction to Archaeology	3
or INTL 104	or Introduction to Archaeology	
or ANTH 103	or Introduction to Anthropology	
or INTL 103	or Introduction to Anthropology	

HUMS 202	Choices in a Consumer Society	1
STAT 210	Basic Practice of Statistics	3
UNIV 112	Focused Inquiry II	3
Approved H&S diverse and global communities course		3
Foreign language (102-level)		4
Term Hours:		17

**Sophomore year****Fall semester**

ANTH 210	Biological Anthropology	3
or ANTH 220	or Cultural Anthropology	
or ANTH 230	or Anthropological Linguistics	
BIOL 101	Biological Concepts (fulfills approved H&S science and technology)	
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S literature and civilization		3
Foreign language (201-level)		3
Term Hours:		15

**Spring semester**

ANTH 210 or ANTH 220 or ANTH 230	Biological Anthropology or Cultural Anthropology or Anthropological Linguistics	3
Approved H&S general education electives		6
Experiential fine arts		1-3
Foreign language (202-level)		3
Term Hours:		13-15

**Junior year****Fall semester**

ANTH 301	Human Evolution	3
or BIOL 341	or Human Evolution	
ANTH 302	Archaeological Theory	3
ANTZ 301	Human Evolution Lab	1
or BIOZ 341	or Human Evolution Lab	
Open electives		9
Term Hours:		16

**Spring semester**

On-campus or study abroad semester:		
ANTH 399	Junior Seminar	1
Methods requirement		3
Open electives		11
Term Hours:		15

**Summer semester**

Study abroad, recommended		0-6
Term Hours:		0-6

**Senior year****Fall semester**

ANTH 454	Theory in Cultural Anthropology	3
----------	---------------------------------	---

ANTH 493	Anthropology Internship	1-3
or ANTH 398	or Field Investigations in Anthropology	
Methods requirement		3
Open electives		9
Term Hours:		16-18

**Spring semester**

ANTH 490	Anthropology Senior Capstone	3
Anthropology elective		3
ANTH 493	Anthropology Internship	1-3
or ANTH 398	or Field Investigations in Anthropology	
Open electives		6
Term Hours:		13-15
Total Hours:		120-132

## Foreign Language, Bachelor of Arts (B.A.) with a concentration in French

**Peter Kirkpatrick**

Associate professor and program coordinator, French

[worldstudies.vcu.edu/academics/languages/french](http://worldstudies.vcu.edu/academics/languages/french) (<http://worldstudies.vcu.edu/academics/foreign-languages/french>)

The foreign language program offers a varied interdisciplinary humanities curriculum, global in scope and designed to increase students' knowledge about the cultures and traditions, languages, literature and media, history, values, concerns, and aspirations of peoples in different countries and regions of the world. The goal of the program is ultimately also to both broaden students' comparative intercultural perspectives and develop their cross-cultural communication abilities. Students have the option to pursue a focus or even combination of concentrations in foreign language(s), area studies and/or global issues (in either cinema and/or social justice), depending upon their interests and career plans. Within each chosen concentration or minor, the range of offerings allows for flexibility in configuring each individual's course of study, which can be organized in a manner that best suits a student's particular needs.

The Bachelor of Arts in Foreign Language will qualify students to pursue any of a number of career paths, including international communications, business and marketing, aid and development, journalism, or education; government foreign service, international affairs, immigration service or the Peace Corps; nongovernmental organizations involved in development, relief programs, immigration or human rights advocacy; or public relations in a multicultural environment. Graduates of our program will also find opportunities in teaching at home or abroad, as well as in work with a variety of public-service organizations. In addition, an undergraduate degree in foreign language provides excellent background and qualifications for admittance to graduate degree programs in a number of humanities disciplines, including foreign languages and international studies, as well as in international law, business or journalism.

## Learning outcomes

- Development of written communication skills
- Development of oral communication skills
- Development of reading and analytical skills

- Cultural competence

**Upon completing this program, students will know and know how to do the following:**

- The goal of the program is ultimately to both broaden students' comparative intercultural perspectives and develop their cross-cultural communication abilities.
- Students gain proficiency in speaking, listening, reading and writing in French.
- Students also gain knowledge and a set of cognitive, affective and behavioral skills and characteristics that support effective and appropriate interaction with the French-speaking world.

## Special requirements

To earn a Bachelor of Arts in Foreign Language, students must complete at least 39 credits within the major, 36 credits of which must be upper-level (300-level or above), with a minimum GPA of 2.25 within the major.

Majors in foreign language are encouraged to choose a minor that will broaden their global and cultural perspectives. Foreign language majors are encouraged — but not limited — to complete the course requirements for a minor in one of the following fields: African studies, Arabic and Middle Eastern studies, anthropology, Chinese and Asian Studies, economics, business (general business minor), French, geography, German, history, Italian studies, Mediterranean studies, political science, religious studies, Russian studies, sociology, Spanish or urban and regional studies. Students also may want to consider a double major. The School of World Studies Advising Office will work with students to explore the benefits of a double major and/or a minor.

All foreign language majors, students transferring credits from study abroad and transfer students who intend to major in a foreign language must take a **minimum of two 400-level courses at VCU** in the chosen language area. Both credit and distribution (minimum of 10 courses) requirements for the concentration must be satisfied.

## Degree requirements for Foreign Language, Bachelor of Arts (B.A.) with a concentration in French

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
----------	-------------------------------	---

Approved H&S diverse and global communities	3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)	
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
Total Hours	11-23

<sup>1</sup> Course offered by the School of the Arts

## Collateral requirements

### Experiential learning

Select one of the following:	0-3
Major-specific service-learning course	
Study abroad program	
Approved internship: Select one of the following:	
FRLG 493	World Languages Internship
WRLD 493	World Cultures Internship
INTL 493	International Studies Internship
Or other preapproved internship opportunities	

### Foreign language requirement

In order to begin upper-level course work in any foreign language, students must have consecutively completed the following courses or prove the equivalent proficiency level through placement testing:

FREN 201	Intermediate French
FREN 202	Intermediate French Readings
or FREN 205	Intermediate Conversation

### World Passport

Students must complete the School of World Studies World Passport

Total Hours	0-9
-------------	-----

## Major requirements

FREN 300	Advanced Grammar and Writing	6
& FREN 301	and Advanced Grammar and Writing	
FREN 305	Advanced Conversation	3
or FREN 307	French Conversation and Film	
FREN 320	French Civilization and Culture I	3
FREN 321	French Civilization and Culture II	3
FREN 330	Survey of Literature	6
& FREN 331	and Survey of Literature	
FREN electives (400-level or above)		9
INTL/WRLD 203	Cultural Texts and Contexts: ____	3
WRLD 302	Communicating Across Cultures	3
WRLD 490	Seminar in World Cultures and Languages (capstone)	3
Total Hours		39



## Open electives

Select 26-49 open elective credits 26-49

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester			Hours
FREN 101	Elementary French		4
WRLD 203	Cultural Texts and Contexts: ____ (fulfills approved literature and civilization)		3
UNIV 101	Introduction to the University		1
UNIV 111	Focused Inquiry I		3
Approved quantitative literacy			3-4
Term Hours:			14-15

### Spring semester

FREN 102	Elementary French		4
HUMS 202	Choices in a Consumer Society		1
UNIV 112	Focused Inquiry II		3
Approved diverse and global communities			3
Approved human, social and political behavior			3
Term Hours:			14

### Sophomore year

Fall semester			
FREN 201	Intermediate French		3
UNIV 200	Inquiry and the Craft of Argument		3
Approved general education elective			3-4
Approved science and technology			3-4
Open electives			3
Term Hours:			15-17

### Spring semester

FREN 202	Intermediate French Readings		3
WRLD 302	Communicating Across Cultures		3
Approved general education elective			3
Experiential fine arts			1-3
Open electives			6
Term Hours:			16-18

### Junior year

Fall semester			
FREN 300	Advanced Grammar and Writing		3
FREN 305 or FREN 307	Advanced Conversation or French Conversation and Film		3
Open electives			9
Term Hours:			15

### Spring semester

On-campus or study abroad semester:			
FREN 301	Advanced Grammar and Writing		3
FREN 321	French Civilization and Culture II		3
FREN 331	Survey of Literature		3

Open electives			7
Term Hours:			16
<b>Summer semester</b>			
Study abroad (recommended):			0-6
FREN 320 or FREN 330	French Civilization and Culture I or Survey of Literature		3
WRLD 391	Topics in World Languages and Cultures (or FREN elective 300-level or above)		3
Term Hours:			0-6
<b>Senior year</b>			
<b>Fall semester</b>			
FREN 320	French Civilization and Culture I (if not taken abroad)		3
FREN 330	Survey of Literature (if not taken abroad)		3
FRLG 493	World Languages Internship (or FREN elective 400-level or above)		3
Open electives			6
Term Hours:			15
<b>Spring semester</b>			
FREN elective (400-level or above)			3
FRLG 493	World Languages Internship (or FREN elective 400-level or above, whichever not completed in Fall)		3
WRLD 490	Seminar in World Cultures and Languages (capstone)		3
Open electives			6
Term Hours:			15
Total Hours:			120-131

## Foreign Language, Bachelor of Arts (B.A.) with a concentration in German

### Jessica Lonnes

Program coordinator, German

[worldstudies.vcu.edu/german](http://worldstudies.vcu.edu/german) (<http://worldstudies.vcu.edu/academics/foreign-languages/german>)

The foreign language program offers a varied interdisciplinary humanities curriculum, global in scope and designed to increase students' knowledge about the cultures and traditions, languages, literature and media, history, values, concerns, and aspirations of peoples in different countries and regions of the world. The goal of the program is ultimately also to both broaden students' comparative intercultural perspectives and develop their cross-cultural communication abilities. Students have the option to pursue a focus or even combination of concentrations in foreign language(s), area studies and/or global issues (in either cinema and/or social justice), depending upon their interests and career plans. Within each chosen concentration or minor, the range of offerings allows for flexibility in configuring each individual's course of study, which can be organized in a manner that best suits a student's particular needs.

The Bachelor of Arts in Foreign Language will qualify students to pursue any of a number of career paths, including international communications, business and marketing, aid and development, journalism, or education; government foreign service, international affairs, immigration service

or the Peace Corps; nongovernmental organizations involved in development, relief programs, immigration or human rights advocacy; or public relations in a multicultural environment. Graduates of our program will also find opportunities in teaching at home or abroad, as well as in work with a variety of public-service organizations. In addition, an undergraduate degree in foreign language provides excellent background and qualifications for admittance to graduate degree programs in a number of humanities disciplines, including foreign languages and international studies, as well as in international law, business or journalism.

## Learning outcomes

- Development of written communication skills
- Development of oral communication skills
- Development of reading and analytical skills
- Cultural competence

**Upon completing this program, students will know and know how to do the following:**

- The goal of the program is ultimately to both broaden students' comparative intercultural perspectives and develop their cross-cultural communication abilities.
- Students gain proficiency in speaking, listening, reading and writing in German.
- Students also gain knowledge and a set of cognitive, affective and behavioral skills and characteristics that support effective and appropriate interaction with the German-speaking world.

## Special requirements

To earn a Bachelor of Arts in Foreign Language, students must complete at least 39 credits within the major, 36 credits of which must be upper-level (300-level or above), with a minimum GPA of 2.25 within the major.

Majors in foreign language are encouraged to choose a minor that will broaden their global and cultural perspectives. Foreign language majors are encouraged — but not limited — to complete the course requirements for a minor in one of the following fields: African studies, Arabic and Middle Eastern studies, anthropology, Chinese and Asian Studies, economics, business (general business minor), French, geography, German, history, Italian studies, Mediterranean studies, political science, religious studies, Russian studies, sociology, Spanish, or urban and regional studies. Students also may want to consider a double major. The School of World Studies Advising Office will work with students to explore the benefits of a double major and/or a minor.

All foreign language majors, students transferring credits from study abroad and transfer students who intend to major in a foreign language must take a **minimum of two 400-level courses at VCU** in the chosen language area. Both credit and distribution (minimum of 10 courses) requirements for the concentration must be satisfied.

## Degree requirements for Foreign Language, Bachelor of Arts (B.A.) with a concentration in German

### General Education requirements

University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

## Collateral requirements

### Experiential learning

Select one of the following:	0-3
Major-specific service-learning course	
Study abroad program	
Approved internship: Select one of the following:	
FRLG 493	World Languages Internship
WRLD 493	World Cultures Internship
INTL 493	International Studies Internship
Or other preapproved internship opportunities	

### Foreign language requirement

In order to begin upper-level course work in any foreign language, students must have consecutively completed the following courses or prove the equivalent proficiency level through placement testing:

GRMN 201	Intermediate German
GRMN 202	Intermediate German II
or GRMN 205	Intermediate Conversation

### World Passport

Students must complete the School of World Studies World Passport

Total Hours	0-9
-------------	-----

## Major requirements

GRMN 300	Composition and Communication	3
GRMN 301	Grammar and Writing	3
Select one of the following:		3
GRMN 305	German Conversation	
GRMN 307	German Conversation and Film	
GRMN 311	German Through the Media	
GRMN 320	From the Vandals to Kant: Civilization and Literature I	3
GRMN 321	From Faust to Nazism: Civilization and Literature II	3
GRMN 322	From Kafka's World to the EU: Civilization and Literature III	3
GRMN elective (300-level or above)		3
GRMN electives (400-level or above)		9
WRLD/INTL 203	Cultural Texts and Contexts: ____	3
WRLD 302	Communicating Across Cultures	3
WRLD 490	Seminar in World Cultures and Languages (capstone)	3
Total Hours		39

## Open electives

Select 26-49 open elective credits 26-49

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
GRMN 101	Elementary German I	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
WRLD 203	Cultural Texts and Contexts: ____ (fulfills approved literature and civilization)	3
Approved quantitative literacy		3
Term Hours:		14

### Spring semester

GRMN 102	Elementary German	4
HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Approved human, social and political behavior		3
Approved diverse and global Communities		3
Term Hours:		14

### Sophomore year

Fall semester		
GRMN 201	Intermediate German	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved science and technology		3-4
Approved general education electives		6-7
Term Hours:		15-17

### Spring semester

GRMN 202	Intermediate German II	3
WRLD 302	Communicating Across Cultures	3
Experiential fine arts		1-3
Open electives		9
Term Hours:		16-18

### Junior year

#### Fall semester

On-campus or study abroad semester:

GRMN 300	Composition and Communication	3
GRMN 320	From the Vandals to Kant: Civilization and Literature I	3
or GRMN 321	or From Faust to Nazism: Civilization and Literature II	
or GRMN 322	or From Kafka's World to the EU: Civilization and Literature III	
GRMN elective (300-level or above)		3
Open electives		6
Term Hours:		15

#### Spring semester

On-campus or study abroad semester:

GRMN 301	Grammar and Writing	3
GRMN 320	From the Vandals to Kant: Civilization and Literature I	3
or GRMN 321	or From Faust to Nazism: Civilization and Literature II	
or GRMN 322	or From Kafka's World to the EU: Civilization and Literature III	
GRMN 305	German Conversation	3
or GRMN 307	or German Conversation and Film	
or GRMN 311	or German Through the Media	
Open electives		6
Term Hours:		15

### Summer semester

Study abroad (recommended):

Select one of the following:		0-3
GRMN 305	German Conversation (if not already taken)	3
GRMN elective (300-level or above)		3
Select one of the following:		0-3
GRMN elective (400-level or above)		3
WRLD 391	Topics in World Languages and Cultures	1-3
Term Hours:		0-6

### Senior year

#### Fall semester

FRLG 493	World Languages Internship or GRMN elective (400-level or above)	3
GRMN 320	From the Vandals to Kant: Civilization and Literature I	3
or GRMN 321	or From Faust to Nazism: Civilization and Literature II	
or GRMN 322	or From Kafka's World to the EU: Civilization and Literature III	
GRMN elective (400-level or above)		3

Open electives	7
Term Hours:	16
<b>Spring semester</b>	
FRLG 493 World Languages Internship or GRMN elective (400-level or above) (whichever not completed in Fall)	3
WRLD 490 Seminar in World Cultures and Languages (capstone)	3
GRMN elective (400-level or above)	3
Open electives	6
Term Hours:	15
Total Hours:	120-130

## Foreign Language, Bachelor of Arts (B.A.) with a concentration in Spanish

**Laura Middlebrooks, Ph.D.**

Instructor and program coordinator, Spanish

[worldstudies.vcu.edu/spanish](http://worldstudies.vcu.edu/spanish) (<http://worldstudies.vcu.edu/academics/foreign-languages/spanish>)

The foreign language program offers a varied interdisciplinary humanities curriculum, global in scope and designed to increase students' knowledge about the cultures and traditions, languages, literature and media, history, values, concerns, and aspirations of peoples in different countries and regions of the world. The goal of the program is ultimately also to both broaden students' comparative intercultural perspectives and develop their cross-cultural communication abilities. Students have the option to pursue a focus or even combination of concentrations in foreign language(s), area studies and/or global issues (in either cinema and/or social justice), depending upon their interests and career plans. Within each chosen concentration or minor, the range of offerings allows for flexibility in configuring each individual's course of study, which can be organized in a manner that best suits a student's particular needs.

The Bachelor of Arts in Foreign Language will qualify students to pursue any of a number of career paths, including international communications, business and marketing, aid and development, journalism, or education; government foreign service, international affairs, immigration service or the Peace Corps; nongovernmental organizations involved in development, relief programs, immigration or human rights advocacy; or public relations in a multicultural environment. Graduates of our program will also find opportunities in teaching at home or abroad, as well as in work with a variety of public-service organizations. In addition, an undergraduate degree in foreign language provides excellent background and qualifications for admittance to graduate degree programs in a number of humanities disciplines, including foreign languages and international studies, as well as in international law, business or journalism.

### Learning outcomes

- Development of written communication skills
- Development of oral communication skills
- Development of reading and analytical skills
- Cultural competence

**Upon completing this program, students will know and know how to do the following:**

- The goal of the program is ultimately to both broaden students' comparative intercultural perspectives and develop their cross-cultural communication abilities.
- Students gain proficiency in speaking, listening, reading and writing in Spanish.
- Students gain knowledge and a set of cognitive, affective and behavioral skills and characteristics that support effective and appropriate interaction in a variety of cultural contexts. These range from Spain to the Spanish-speaking Americas to Hispanic U.S. populations.

### Special requirements

To earn a Bachelor of Arts in Foreign Language, students must complete 39 credits within the major, 36 credits of which must be upper-level (300-level or above), with a minimum GPA of 2.25 within the major.

Majors in foreign language are encouraged to choose a minor that will broaden their global and cultural perspectives. Foreign language majors are encouraged – but not limited – to complete the course requirements for a minor in one of the following fields: African studies, Arabic and Middle Eastern studies, anthropology, Chinese and Asian Studies, economics, business (general business minor), French, geography, German, history, Italian studies, Mediterranean studies, political science, religious studies, Russian studies, sociology, Spanish, or urban and regional studies. Students also may want to consider a double major. The School of World Studies Advising Office will work with students to explore the benefits of a double major and/or a minor.

All foreign language majors, students transferring credits from study abroad and transfer students who intend to major in a foreign language must take a minimum of two 400-level courses (in literature, civilization or cinema) at VCU in the chosen language area. Both credit and distribution requirements (minimum of 10 courses) for the concentration must be satisfied.

## Degree requirements for Foreign Language, Bachelor of Arts (B.A.) with a concentration in Spanish

### General Education requirements

**University Core Education Curriculum (minimum 21 credits)**

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

**Additional College of Humanities and Sciences requirements (11-23 credits)**

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

## Collateral requirements

### Experiential learning

Select one of the following:		0-3
Major-specific service-learning course		
Study abroad program		
Approved internship: Select one of the following:		
FRLG 493	World Languages Internship	
WRLD 493	World Cultures Internship	
INTL 493	International Studies Internship	
Or other preapproved internship opportunities		

### Foreign language requirement

In order to begin upper-level course work in any foreign language, students must have consecutively completed the following courses or prove the equivalent proficiency level through placement testing:

SPAN 201	Intermediate Spanish	
SPAN 202	Intermediate Spanish Readings	
or SPAN 205	Intermediate Spanish Conversation	

### World Passport

Students must complete the School of World Studies World Passport

Total Hours		0-9
-------------	--	-----

## Major requirements

INTL/WRLD 203	Cultural Texts and Contexts: ____	3
SPAN 300	Advanced Grammar and Writing	6
& SPAN 301	and Advanced Grammar and Writing	
Select one of the following advanced conversation courses: <sup>1</sup>		3
SPAN 305	Spanish Conversation	
SPAN 307	Spanish Conversation and Film	
SPAN 311	Spanish Through the Media (advanced conversation course)	
SPAN 320	Civilization of Spain I (civilization course)	3
or SPAN 321	Latin American Civilization I	
SPAN/INTL 331	Survey of Latin American Literature (survey of literature course)	3
or SPAN 330	Survey of Spanish Literature	

Select two additional SPAN courses from the 300-level electives list below. 6

Select three additional SPAN courses from the 400-level electives list below. 9

WRLD 302	Communicating Across Cultures	3
WRLD 490	Seminar in World Cultures and Languages (capstone)	3

Total Hours 39

<sup>1</sup> Among the three advanced conversation courses (SPAN 305, SPAN 307 and SPAN 311), students can take only one of the three to meet core major and minor requirements.

## Open electives

Select 25-48 open elective credits 25-48

## Total minimum requirement 120 credits

### SPAN electives

#### 300-level courses <sup>1</sup>

SPAN 320	Civilization of Spain I	3
SPAN 321	Latin American Civilization I	3
SPAN 322	Hispanic Immigrants in the U.S.	3
SPAN 330	Survey of Spanish Literature	3
SPAN 331	Survey of Latin American Literature	3
SPAN 332	Latino Writers in the U.S.	3

#### 400-level courses <sup>2</sup>

SPAN 402	Language Issues in the Spanish-speaking World	3
SPAN 403	History of the Spanish Language	1-3
SPAN 414	Commercial Spanish	1-3
SPAN 420	Civilization of Spain II	1-3
SPAN 421	Civilization of Latin America II	1-3
SPAN 422	Spanish and Latin American Cinema	1-3
SPAN 430	Literary Genres	1-3
SPAN 431	Literary Periods	1-3
SPAN 432	Hispanic Culture Through Literature	3
SPAN 433	Don Quixote	3
SPAN 485	Spanish Study Abroad	1-12
SPAN 491	Topics in Spanish	1-3
SPAN 492	Independent Study	1-3

<sup>1</sup> SETI 400 may be selected to fulfill one 300-level SPAN elective.

<sup>2</sup> One of SETI 400, SETI 410 or SETI 420 may be selected to fulfill one 400-level SPAN elective.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
SPAN 101	Elementary Spanish	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
WRLD 203	Cultural Texts and Contexts: ____ (fulfills approved literature and civilization)	3



Approved quantitative literacy	3-4
Term Hours:	14-15

**Spring semester**

HUMS 202	Choices in a Consumer Society	1
SPAN 102	Elementary Spanish	4
UNIV 112	Focused Inquiry II	3
Approved diverse and global communities		3
Approved human, social and political behavior		3
Term Hours:		14

**Sophomore year****Fall semester**

SPAN 201	Intermediate Spanish	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved general education electives		6-7
Approved science and technology		3-4
Term Hours:		15-17

**Spring semester**

SPAN 202	Intermediate Spanish Readings	3
WRLD 302	Communicating Across Cultures	3
Experiential fine arts		1-3
Open electives		9
Term Hours:		16-18

**Junior year****Fall semester**

On-campus or study abroad semester:

SPAN 300	Advanced Grammar and Writing	3
SPAN 305	Spanish Conversation	3
or SPAN 307	or Spanish Conversation and Film	
or SPAN 311	or Spanish Through the Media	
Open electives		9
Term Hours:		15

**Spring semester**

On-campus or study abroad semester:

SPAN 301	Advanced Grammar and Writing	3
SPAN 330	Survey of Spanish Literature	3
or SPAN 331	or Survey of Latin American Literature	
or INTL 331	or Survey of Latin American Literature	
Open electives		9
Term Hours:		15

**Summer semester**

Study abroad (recommended):

SPAN elective (300-level)		0-3
Select one of the following:		0-3
SPAN 320	Civilization of Spain I	-
or SPAN 321	or Latin American Civilization I	
Term Hours:		0-6

**Senior year****Fall semester**

FRLG 493	World Languages Internship (or SPAN elective 400-level or above)	3
SPAN 320 or SPAN 321	Civilization of Spain I or Latin American Civilization I	3
WRLD 490	Seminar in World Cultures and Languages (or open elective)	3
SPAN elective (300-level) (if not taken abroad)		3
SPAN elective (300-level)		3
Open elective		1-3
Term Hours:		16-18
<b>Spring semester</b>		
FRLG 493	World Languages Internship or SPAN elective 400-level or above) (whichever not completed in Fall	3
SETI 400	Spanish-English Comparative Grammar (or SPAN elective 400-level or above)	3
WRLD 490	Seminar in World Cultures and Languages if not already taken) (or open elective	3
SPAN elective (400-level or above)		3
Open elective		3
Term Hours:		15
Total Hours:		120-133

## International Studies, Bachelor of Arts (B.A.) with a concentration in European studies

The international studies program offers a varied interdisciplinary humanities curriculum, global in scope and designed to increase students' knowledge about the cultures and traditions, languages, literature and media, history, values, concerns, and aspirations of peoples in different countries and regions of the world. The goal of the program is ultimately also to both broaden students' comparative intercultural perspectives and develop their cross-cultural communication abilities. Within each chosen concentration, the interdisciplinary range of offerings allows for flexibility in configuring each individual's course of study, which can be organized in a manner that best suits a student's particular needs.

## Learning outcomes

1. Knowledge regarding the interrelationship between local and global institutions, cultures, languages and religions
2. Knowledge regarding the differences and unity of human values, aspirations and concerns
3. Knowledge of local and global issues of social justice, human rights and sustainability
4. Development of reading, writing and oral communication skills
5. Development of ethical, critical and creative thinking skills
6. Development of global awareness and global citizenship

### Upon completing this program:

1. Students will be able to critically analyze culturally specific and global issues from a variety of disciplinary perspectives.

2. Students will demonstrate knowledge of universals and differences in worldviews and ethical systems (values) across a range of cultures.
3. Students will acquire the cross-cultural communication skills and cultural sensitivity to interact effectively in international and/or multicultural settings, and to engage with cultural difference in an informed and compassionate fashion.

Students will attain a third-year college level proficiency in a second language in each of the four modalities: speaking, listening, reading and writing.

## Experiential learning and study abroad

### World Passport

As part of the School of World Studies' commitment to learning through engagement, each student within the school is required to complete a World Passport to introduce him or her to a breadth of experience beyond the core curriculum: cultural opportunities, experiential learning, seminars and conferences, career workshops, international experiences, and multicultural campus activities. Students are required to obtain information about their personal World Passport from the School of World Studies Advising Office. The passport will be kept in the student advising file throughout the duration of study. It will be validated and approved by School of World Studies Advising Office prior to graduation, and then given to the student upon completion.

The passports are color-coded for **four required categories** of activities to be completed by students before graduation from VCU with a degree from the School of World Studies.

- **Professional preparation** prepares students for careers, graduate school and lifelong learning.
- **Crossing boundaries** exposes students to international and multicultural interactions and ideas to enhance their cultural competency.
- **Community engagement** enhances the undergraduate experience by greater involvement in the community.
- **Experiential learning** provides students the opportunity to demonstrate success in applying program content beyond a classroom setting.

The School of World Studies is committed to the premise that learning is best facilitated through engagement with the dynamic complexities and challenges of the world outside the classroom. Majors in the school are required to participate in experiential learning options. All experiential learning opportunities must receive prior approval from the SWS Advising Office and include internships, service-learning courses, certain noncredit options and study abroad.

### Study abroad

Study-abroad programs provide students with opportunities for short-term, semester-length and yearlong immersion in the language, culture and civilization of their chosen host country. A list of current VCU faculty-led and other study abroad opportunities can be found at [global.vcu.edu/abroad](http://global.vcu.edu/abroad) (<http://www.global.vcu.edu/abroad>). For more information about School of World Studies involvement in study abroad opportunities, visit [worldstudies.vcu.edu](http://worldstudies.vcu.edu) (<http://www.global.vcu.edu/abroad>).

## Special requirements

To earn a Bachelor of Arts in International Studies, students must complete 120 course credits, at least 36 of which must be in the major, with a minimum GPA of 2.25. Students must take at least 21

credits total of upper-level (300- or 400-level) courses within the major, with a minimum of **nine** credits at the upper level earned at VCU (not through transfer credit). The focus of a degree in international studies is interdisciplinary and should reflect a well-rounded mix of courses completed in a variety of disciplines (e.g. ANTH, HIST, POLI, SOCY, WRLD and foreign language).

International studies majors are encouraged to complete the course requirements for a minor that will broaden their international studies perspectives. Minor options are varied and may be chosen from a broad range of subject areas. Students also may want to consider a second major. Advisers will work with students to explore the benefits of a double major and a minor.

Students must fulfill an experiential learning requirement through an approved internship, service-learning course or study-abroad program. Within the core requirements, students must complete six credits of foreign language study through the advanced level (300 level or higher). Native speakers of a language not taught at VCU can demonstrate fluency through evaluation to meet the requirement and then substitute six credits of additional course work chosen from the concentration electives to complete the degree. For students studying a foreign language not taught at VCU, or for which no upper-level courses are offered on campus, the School of World Studies advisers will assist the student in identifying appropriate language study options at other U.S. institutions or abroad. International studies majors also must fulfill the college general education requirements for the Bachelor of Arts degree.

To major in international studies, students must take course work that fulfills the requirements for the concentration chosen.

## Degree requirements for International Studies, Bachelor of Arts (B.A.) with a concentration in European studies

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		

Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
<b>Total Hours</b>	<b>11-23</b>

<sup>1</sup> Course offered by the School of the Arts

## Collateral requirements

Foreign language through the 202 or 205 level	0-6
Experiential learning requirement	0-3
World Passport completion	0
<b>Total Hours</b>	<b>0-9</b>

## Major requirements

### Core requirements for all international studies majors

Select one of the following:		3
INTL 101	Human Societies and Globalization	
INTL/POLI 105	International Relations	
ANTH/INTL 103	Introduction to Anthropology	
INTL 490	Seminar in International Issues (capstone)	3
RELS 340/INTL 341	Global Ethics and the World's Religions	3
WRLD 391	Topics in World Languages and Cultures (taken on a VCU-faculty led study abroad program)	3
or WRLD 302	Communicating Across Cultures	
Upper-level foreign language course work (300-level or higher)		6
<b>Concentration</b>		
Concentration electives (select courses to complete the requirements described in the electives lists below)		18
<b>Total Hours</b>		<b>36</b>

## Open electives

Select 28-52 open elective credits	28-52
------------------------------------	-------

## Total minimum requirement 120 credits

### Electives

The concentration in European studies requires a total of 18 credits of interdisciplinary course work. A maximum of six credits within the concentration may be earned within the same discipline (e.g. HIST, SPAN, POLI, RELS, etc.) Courses marked "when appropriate" require preapproval from the School of World Studies Advising Office.

Select a minimum of three credits from the following:		3
HIST 101	Survey of European History	
or HIST 102	Survey of European History	
HIST 310	The Early Middle Ages	
HIST 311/RELS 308	High and Later Middle Ages	
HIST 312	Europe in the Early Modern Period, 1350-1650	
HIST 313	Europe in Absolutism and Enlightenment, 1648-1815	

HIST 314	The Zenith of European Power, 1815-1914	
HIST 315	The Age of Total War in Europe, 1914-1945	
HIST 316	Postwar Europe, 1945 to the Present	
HIST 317	History of France I	
HIST 318	History of France II	
HIST 319	History of Germany I	
HIST 320	History of Germany II	
HIST 321	The Holocaust	
HIST 322	Nazi Germany	
HIST 324	History of Early Modern Britain	
HIST 325	History of Modern Britain	
HIST 326	The British Empire	
HIST 327	History of Russia I	
HIST 328	History of Russia II	
HIST 329	History of Spain and Portugal	
HIST 330/GSWS 339	History of Women in Europe I	
HIST 331/GSWS 340	History of Women in Europe II	
HIST 404	Studies in Modern European History: _____	

Select a minimum of three credits from the following: 3

ANTH/INTL 455	Anthropology of Development and Globalization (when appropriate)	
FRLG/INTL 345/URSP 350	Great Cities of the World (when appropriate)	
INTL 491	Topics in International Studies (when appropriate)	
INTL 492	Independent Study (when appropriate)	
MGMT/INTL 419	Doing Business in Europe	
POLI/INTL 352	European Governments and Politics	
POLI 354/354	Russian and Post-Soviet Politics	
POLI 362/362	International Organizations and Institutions	
POLI/INTL 365	International Political Economy	
URSP/INTL 334	Regional Geography of _____ (when appropriate)	

Select a minimum of three credits from the following: 3

FLET/INTL 391	Topics in Foreign Literature in English Translation (when appropriate)	
FREN 320	French Civilization and Culture I	
FREN 321	French Civilization and Culture II	
FREN 420	French Regional Culture	
FREN 421	French Contemporary Culture	
FREN 425	French Media	
FREN/INTL 450	Francophone Literatures and Cultures	
GRMN 320	From the Vandals to Kant: Civilization and Literature I	
GRMN 321	From Faust to Nazism: Civilization and Literature II	
GRMN 322	From Kafka's World to the EU: Civilization and Literature III	

GRMN 420	The Turn of the Century	
GRMN 423	Folk/Popular Culture	
GRMN 424	Culture and Society	
ITAL 320	Italian Cinema: ____	
ITAL 330	Themes in Italian Literature: ____	
ITAL 391	Topics in Italian	
RELS 310	Mediterranean Religions	
RUSS 311	Conversation and Media	
RUSS 330	Literature and Culture: ____	
RUSS 422	Russian Film	
RUSS 491	Topics in Russian	
SPAN 320	Civilization of Spain I	
SPAN 330	Survey of Spanish Literature	
SPAN 420	Civilization of Spain II	
SPAN 433	Don Quixote	
WRLD 391	Topics in World Languages and Cultures (taught on campus, and when appropriate)	
WRLD 422	National Cinema (when appropriate)	
WRLD 491	Topics in World Languages and Cultures (when appropriate)	
Students may also choose three credits from the following art history courses to complete concentration requirements:		0-3
ARTH 310	Medieval Art and Architecture	
ARTH 315	Renaissance Art and Architecture	
ARTH 320	Baroque and Rococo Art and Architecture	
ARTH 325	19th-century Art and Architecture in Europe	
ARTH 415	Early Italian Renaissance Art and Architecture	
ARTH 417	The High Renaissance	
ARTH 425	Neoclassicism, Romanticism, Realism and Impressionism through Fin-de-Siecle	
or ARTH 426	Neoclassicism, Romanticism, Realism and Impressionism through Fin-de-Siecle	
To complete the remaining credits for the concentration, students choose additional courses from the above categories		6-9
Total Hours		15-21

Courses taken through an accredited study abroad program - must be preapproved through the SWS Advising Office

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
INTL 101	Human Societies and Globalization	3
or INTL 105	or International Relations	
or POLI 105	or International Relations	
or ANTH 103	or Introduction to Anthropology	
or INTL 103	or Introduction to Anthropology	
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved quantitative literacy		3-4
Foreign language 101 (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)		4
Term Hours:		14-15

### Spring semester

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Approved H&S diverse and global communities or approved H&S human, social and political behavior, whichever not satisfied above (ANTH/INTL 103 or INTL 101 or INTL/POLI 105 recommended)		3-4
Concentration elective (HIST 101 Survey of European History recommended)		3
Foreign language 102 (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)		4
Term Hours:		14-15

### Sophomore year

Fall semester		Hours
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S literature and civilization		3
Concentration elective		3
Foreign language 201 (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)		3
Open elective		3
Term Hours:		15
Spring semester		Hours
Approved H&S science and technology		3-4
Concentration elective		3
Experiential fine arts		1-3
Foreign language 202 (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)		3
Open electives		6
Term Hours:		16-19

### Junior year

Fall semester		Hours
RELS 340	Global Ethics and the World's Religions	3
or INTL 341	or Global Ethics and the World's Religions	
Approved H&S general education electives		6-8
Foreign language 300-level or higher (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)		3

Open elective	3
Term Hours:	15-17
<b>Spring semester</b>	
On-campus or study abroad semester:	
WRLD 302 Communicating Across Cultures if not taking WRLD 391 during study abroad) (or open elective	3
Concentration elective	3
Foreign language 300-level or higher (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)	3
Open electives	6
Term Hours:	15
<b>Summer semester</b>	
Optional study abroad (recommended):	
Foreign language course (300-level) (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)	0-3
Select one of the following:	0-3
WRLD 391 Topics in World Languages and Cultures	-
300-level foreign language course abroad	-
Term Hours:	0-6
<b>Senior year</b>	
<b>Fall semester</b>	
Concentration elective	3
Experiential learning requirement (if not already satisfied)	0-3
Foreign language course (300-level) (if pursuing minor in FREN, GRMN, ITAL, LATN, PORT, RUSS or SPAN) or open elective	3
Open electives	9
Term Hours:	15-18
<b>Spring semester</b>	
INTL 490 Seminar in International Issues (capstone)	3
Concentration elective or open elective	3
Foreign language course (300-level) (if pursuing minor in FREN, GRMN, ITAL, LATN, PORT, RUSS or SPAN) or open elective	3
Open electives	7-9
Term Hours:	16-18
Total Hours:	120-138

## International Studies, Bachelor of Arts (B.A.) with a concentration in general studies

The international studies program offers a varied interdisciplinary humanities curriculum, global in scope and designed to increase students' knowledge about the cultures and traditions, languages, literature and media, history, values, concerns, and aspirations of peoples in different countries and regions of the world. The goal of the program is ultimately also to both broaden students' comparative intercultural perspectives and develop their cross-cultural communication abilities. Within each chosen concentration, the interdisciplinary range of offerings allows for flexibility in configuring each individual's course of study, which can be organized in a manner that best suits a student's particular needs.

## Learning outcomes

1. Knowledge regarding the interrelationship between local and global institutions, cultures, languages and religions
2. Knowledge regarding the differences and unity of human values, aspirations and concerns
3. Knowledge of local and global issues of social justice, human rights and sustainability
4. Development of reading, writing and oral communication skills
5. Development of ethical, critical and creative thinking skills
6. Development of global awareness and global citizenship

### Upon completing this program:

1. Students will be able to critically analyze culturally specific and global issues from a variety of disciplinary perspectives.
2. Students will demonstrate knowledge of universals and differences in worldviews and ethical systems (values) across a range of cultures.
3. Students will acquire the cross-cultural communication skills and cultural sensitivity to interact effectively in international and/or multicultural settings, and to engage with cultural difference in an informed and compassionate fashion.

Students will attain a third-year college level proficiency in a second language in each of the four modalities: speaking, listening, reading and writing.

## Experiential learning and study abroad World Passport

As part of the School of World Studies' commitment to learning through engagement, each student within the school is required to complete a World Passport to introduce him or her to a breadth of experience beyond the core curriculum: cultural opportunities, experiential learning, seminars and conferences, career workshops, international experiences, and multicultural campus activities. Students are required to obtain information about their personal World Passport from the School of World Studies Advising Office. The passport will be kept in the student advising file throughout the duration of study. It will be validated and approved by School of World Studies Advising Office prior to graduation, and then given to the student upon completion.

The passports are color-coded for **four required categories** of activities to be completed by students before graduation from VCU with a degree from the School of World Studies.

- **Professional preparation** prepares students for careers, graduate school and lifelong learning.
- **Crossing boundaries** exposes students to international and multicultural interactions and ideas to enhance their cultural competency.
- **Community engagement** enhances the undergraduate experience by greater involvement in the community.
- **Experiential learning** provides students the opportunity to demonstrate success in applying program content beyond a classroom setting.

The School of World Studies is committed to the premise that learning is best facilitated through engagement with the dynamic complexities and challenges of the world outside the classroom. Majors in the school are required to participate in experiential learning options. All experiential learning opportunities must receive prior approval from the SWS Advising



Office and include internships, service-learning courses, certain noncredit options and study abroad.

## Study abroad

Study-abroad programs provide students with opportunities for short-term, semester-length and yearlong immersion in the language, culture and civilization of their chosen host country. A list of current VCU faculty-led and other study abroad opportunities can be found at [global.vcu.edu/abroad](http://global.vcu.edu/abroad) (<http://www.global.vcu.edu/abroad>). For more information about School of World Studies involvement in study abroad opportunities, visit [worldstudies.vcu.edu](http://worldstudies.vcu.edu) (<http://www.global.vcu.edu/abroad>).

## Special requirements

To earn a Bachelor of Arts in International Studies, students must complete 120 course credits, at least 36 of which must be in the major, with a minimum GPA of 2.25. Students must take at least 21 credits total of upper-level (300- or 400-level) courses within the major, with a minimum of **nine** credits at the upper level earned at VCU (not through transfer credit). The focus of a degree in international studies is interdisciplinary and should reflect a well-rounded mix of courses completed in a variety of disciplines (e.g. ANTH, HIST, POLI, SOCY, WRLD and foreign language).

International studies majors are encouraged to complete the course requirements for a minor that will broaden their international studies perspectives. Minor options are varied and may be chosen from a broad range of subject areas. Students also may want to consider a second major. Advisers will work with students to explore the benefits of a double major and a minor.

Students must fulfill an experiential learning requirement through an approved internship, service-learning course or study-abroad program. Within the core requirements, students must complete six credits of foreign language study through the advanced level (300 level or higher). Native speakers of a language not taught at VCU can demonstrate fluency through evaluation to meet the requirement and then substitute six credits of additional course work chosen from the concentration electives to complete the degree. For students studying a foreign language not taught at VCU, or for which no upper-level courses are offered on campus, the School of World Studies advisers will assist the student in identifying appropriate language study options at other U.S. institutions or abroad. International studies majors also must fulfill the college general education requirements for the Bachelor of Arts degree.

To major in international studies, students must take course work that fulfills the requirements for the concentration chosen.

## Degree requirements for International Studies, Bachelor of Arts (B.A.) with a concentration in general studies

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3

Approved humanities/fine arts	3
Approved natural/physical sciences	3-4
Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
Total Hours	21-24

### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Foreign language through the 202 or 205 level	0-6
Experiential learning requirement	0-3
World Passport completion	0
Total Hours	0-9

### Major requirements

#### Core requirements for all international studies majors

Select one of the following:		3
INTL 101	Human Societies and Globalization	
INTL/POLI 105	International Relations	
ANTH/INTL 103	Introduction to Anthropology	
INTL 490	Seminar in International Issues (capstone)	3
INTL 340/341	World Cities Outside of North America	3
WRLD 391	Topics in World Languages and Cultures (taken on a VCU-faculty led study abroad program)	3
or WRLD 302	Communicating Across Cultures	
Upper-level foreign language course work (300-level or higher)		6
<b>Concentration</b>		
Concentration electives <sup>1</sup>		18
Total Hours		36

<sup>1</sup> Students pursuing the general studies concentration in international studies are required to complete the core requirements (18 credits) and, in consultation with a School of World Studies adviser, to design a cohesive interdisciplinary academic plan compatible with the program's specified learning outcomes to complete the remaining/additional required 18 credits of course work.

## Open electives

Select 28-52 open elective credits 28-52

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester			Hours
INTL 101	Human Societies and Globalization (fulfills approved H&S diverse and global communities)		3
UNIV 101	Introduction to the University		1
UNIV 111	Focused Inquiry I		3
Approved quantitative literacy			3-4
Foreign language 101			4
Term Hours:			14-15

### Spring semester

HUMS 202	Choices in a Consumer Society		1
INTL 105 or POLI 105	International Relations or International Relations		3
UNIV 112	Focused Inquiry II		3
Approved H&S human, social and political behavior			3-4
Foreign language 102			4
Term Hours:			14-15

### Sophomore year

Fall semester			
UNIV 200	Inquiry and the Craft of Argument		3
INTL general curriculum elective <sup>1</sup>			3
Approved H&S general education elective			3-4
Approved H&S literature and civilization			3
Foreign language 201			3
Term Hours:			15-16

### Spring semester

INTL 330 or SOCY 330	Global Societies: Trends and Issues or Global Societies: Trends and Issues		3
INTL general curriculum elective (upper-level) <sup>1</sup>			3
Approved H&S science and technology			3-4
Experiential fine arts			1-3
Foreign language 202			3
Minor elective			3
Term Hours:			16-19

### Junior year

Fall semester			
INTL 362 or POLI 362	International Organizations and Institutions or International Organizations and Institutions		3
Approved H&S general education elective			3-4
Foreign language (300, 305, 320 or 321)			3
Minor electives			6
Term Hours:			15-16

### Spring semester

INTL 398	Directed Study Abroad (or approved service learning or semester abroad)		0-3
INTL general curriculum electives (upper-level) <sup>1</sup>			6
Minor electives			6
Open electives			3
Term Hours:			15-18

### Senior year

Fall semester			
INTL 490 or INTL 499	Seminar in International Issues or Senior Seminar		1-3
INTL 493	International Studies Internship (or open elective)		3
Minor elective			3
Open electives			8-9
Term Hours:			15-18

### Spring semester

INTL 493	International Studies Internship (or open elective - whichever not taken in fall)		3
INTL 499 or INTL 490	Senior Seminar or Seminar in International Issues		1-3
Open electives			12
Term Hours:			16-18
Total Hours:			120-135

<sup>1</sup> To complete the major credit requirements in international studies, students plan course work comprised of a coherent set of courses deepening their knowledge in a particular area. Students must formulate and seek pre-approval of their course plan through the SWS Advising Office. A minimum of 21 credits within the major must be earned through upper-level course work (300- and 400-level).

## International Studies, Bachelor of Arts (B.A.) with a concentration in international social justice studies

The international studies program offers a varied interdisciplinary humanities curriculum, global in scope and designed to increase students' knowledge about the cultures and traditions, languages, literature and media, history, values, concerns, and aspirations of peoples in different countries and regions of the world. The goal of the program is ultimately also to both broaden students' comparative intercultural perspectives and develop their cross-cultural communication abilities. Within each chosen concentration, the interdisciplinary range of offerings allows for flexibility in configuring each individual's course of study, which can be organized in a manner that best suits a student's particular needs.

## Learning outcomes

1. Knowledge regarding the interrelationship between local and global institutions, cultures, languages and religions
2. Knowledge regarding the differences and unity of human values, aspirations and concerns

- 3. Knowledge of local and global issues of social justice, human rights and sustainability
- 4. Development of reading, writing and oral communication skills
- 5. Development of ethical, critical and creative thinking skills
- 6. Development of global awareness and global citizenship

Upon completing this program:

- 1. Students will be able to critically analyze culturally specific and global issues from a variety of disciplinary perspectives.
- 2. Students will demonstrate knowledge of universals and differences in worldviews and ethical systems (values) across a range of cultures.
- 3. Students will acquire the cross-cultural communication skills and cultural sensitivity to interact effectively in international and/or multicultural settings, and to engage with cultural difference in an informed and compassionate fashion.

Students will attain a third-year college level proficiency in a second language in each of the four modalities: speaking, listening, reading and writing.

Experiential learning and study abroad  
World Passport

As part of the School of World Studies’ commitment to learning through engagement, each student within the school is required to complete a World Passport to introduce him or her to a breadth of experience beyond the core curriculum: cultural opportunities, experiential learning, seminars and conferences, career workshops, international experiences, and multicultural campus activities. Students are required to obtain information about their personal World Passport from the School of World Studies Advising Office. The passport will be kept in the student advising file throughout the duration of study. It will be validated and approved by School of World Studies Advising Office prior to graduation, and then given to the student upon completion.

The passports are color-coded for **four required categories** of activities to be completed by students before graduation from VCU with a degree from the School of World Studies.

- **Professional preparation** prepares students for careers, graduate school and lifelong learning.
- **Crossing boundaries** exposes students to international and multicultural interactions and ideas to enhance their cultural competency.
- **Community engagement** enhances the undergraduate experience by greater involvement in the community.
- **Experiential learning** provides students the opportunity to demonstrate success in applying program content beyond a classroom setting.

The School of World Studies is committed to the premise that learning is best facilitated through engagement with the dynamic complexities and challenges of the world outside the classroom. Majors in the school are required to participate in experiential learning options. All experiential learning opportunities must receive prior approval from the SWS Advising Office and include internships, service-learning courses, certain noncredit options and study abroad.

Study abroad

Study-abroad programs provide students with opportunities for short-term, semester-length and yearlong immersion in the language, culture

and civilization of their chosen host country. A list of current VCU faculty-led and other study abroad opportunities can be found at [global.vcu.edu/global.vcu.edu/abroad](http://www.global.vcu.edu/global.vcu.edu/abroad). For more information about School of World Studies involvement in study abroad opportunities, visit [worldstudies.vcu.edu](http://www.global.vcu.edu/global.vcu.edu/abroad) (<http://www.global.vcu.edu/global.vcu.edu/abroad>).

Special requirements

To earn a Bachelor of Arts in International Studies, students must complete 120 course credits, at least 36 of which must be in the major, with a minimum GPA of 2.25. Students must take at least 21 credits total of upper-level (300- or 400-level) courses within the major, with a minimum of **nine** credits at the upper level earned at VCU (not through transfer credit). The focus of a degree in international studies is interdisciplinary and should reflect a well-rounded mix of courses completed in a variety of disciplines (e.g. ANTH, HIST, POLI, SOCY, WRLD and foreign language).

International studies majors are encouraged to complete the course requirements for a minor that will broaden their international studies perspectives. Minor options are varied and may be chosen from a broad range of subject areas. Students also may want to consider a second major. Advisers will work with students to explore the benefits of a double major and a minor.

Students must fulfill an experiential learning requirement through an approved internship, service-learning course or study-abroad program. Within the core requirements, students must complete six credits of foreign language study through the advanced level (300 level or higher). Native speakers of a language not taught at VCU can demonstrate fluency through evaluation to meet the requirement and then substitute six credits of additional course work chosen from the concentration electives to complete the degree. For students studying a foreign language not taught at VCU, or for which no upper-level courses are offered on campus, the School of World Studies advisers will assist the student in identifying appropriate language study options at other U.S. institutions or abroad. International studies majors also must fulfill the college general education requirements for the Bachelor of Arts degree.

To major in international studies, students must take course work that fulfills the requirements for the concentration chosen.

Degree requirements for International Studies,  
Bachelor of Arts (B.A.) with a concentration in  
international social justice studies

General Education requirements

University Core Education Curriculum (minimum 21 credits)			
UNIV 111	Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112	Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument		3
Approved humanities/fine arts			3
Approved natural/physical sciences			3-4
Approved quantitative literacy			3-4
Approved social/behavioral sciences			3-4
Total Hours			21-24

**Additional College of Humanities and Sciences requirements (11-23 credits)**

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

**Collateral requirements**

Foreign language through the 202 or 205 level	0-6
Experiential learning requirement	0-3
World Passport completion	0
Total Hours	0-9

**Major requirements****Core requirements for all international studies majors**

Select one of the following:		3
INTL 101	Human Societies and Globalization	
INTL/POLI 105	International Relations	
ANTH/INTL 103	Introduction to Anthropology	
INTL 490	Seminar in International Issues (capstone)	3
RELS 340/INTL 341	Global Ethics and the World's Religions	3
WRLD 391	Topics in World Languages and Cultures (taken on a VCU-faculty led study abroad program)	3
or WRLD 302	Communicating Across Cultures	
Upper-level foreign language course work (300-level or higher)		6
<b>Concentration</b>		
Concentration electives (select courses to complete the requirements described in the electives lists below)		18
Total Hours		36

**Open electives**

Select 28-52 open elective credits	28-52
------------------------------------	-------

**Total minimum requirement 120 credits****Electives**

The concentration in international social justice studies requires a total of 18 credits of interdisciplinary course work. A maximum of six credits within the concentration may be taken from within the same discipline to fulfill these requirements.

**Required courses**

WRLD 210	International Social Justice Studies	3
----------	--------------------------------------	---

WRLD 220	Human Rights and Literature	3
Select at least three credits from the following:		3
RELS 450/INTL 449	Religion, Globalization and Social Justice	
RELS/INTL 451	Religion, Racism and Social Justice	
RELS/INTL 453	Western Religions, Women and Social Justice	
RELS/INTL 455	Catholic Ethics and Social Justice	
Select 9 credits from at least three of the following categories:		9
History, gender, and race:		
AFAM/GSWs/SOCY 305	African American Family in Social Context	
ANTH 200	Introduction to African Societies	
ANTH/AFAM/INTL 420	Women of Africa	
GSWS 301	Feminist Social Theory	
GSWS 309	Global Women's Health	
HIST 354	History of Native Americans in the South	
HIST 355	Native Americans in Modern America	
HIST 365/GSWs 341	American Women's History I	
HIST 380/AFAM 390/GSWs 390	Africa and the Americas: Slavery, Gender and Race	
HIST 416	Studies in the History of Women, Gender and Sexuality: ____	
POLI/AFAM 318	Politics of Race, Class and Gender	
POLI/GSWs 366/INTL 368	Women and Global Politics	
Literature:		
ENGL/AFAM 363/INTL 366	African Literature	
ENGL/AFAM 365/INTL 367	Caribbean Literature	
ENGL 381	Multiethnic Literature	
FREN/INTL 450	Francophone Literatures and Cultures	
GRMN 421	The Postwar German Scene	
SPAN 322	Hispanic Immigrants in the U.S.	
SPAN 332	Latino Writers in the U.S.	
Politics and globalization:		
ANTH/INTL 349	Rethinking a Continent: Latin America	
ANTH/INTL 350	Rethinking a Continent: Europe	
ANTH/INTL 455	Anthropology of Development and Globalization	
MASC/WRLD 359	International Media Coverage: The Middle East	
POLI/AFAM 302	Politics of the Civil Rights Movement	
POLI/AFAM/INTL 356	Government and Politics of Africa	
POLI/AFAM/INTL 357	Politics of Southern Africa	
POLI/INTL 365	International Political Economy	
POLI/GSWs 366/INTL 368	Women and Global Politics	

Topics (when appropriate):<sup>1</sup>

ANTH 391	Topics in Anthropology	
FLET 391	Topics in Foreign Literature in English Translation	
FREN 491	Topics in French (for example, «Cinéma du monde arabe»)	
GRMN 491	Topics in German	
RELS 391	Topics in Religious Studies	
RELS 491	Topics in Religious Studies	
RUSS 491	Topics in Russian	
SPAN 491	Topics in Spanish	
WRLD 391	Topics in World Languages and Cultures (taught on campus)	
WRLD 491	Topics in World Languages and Cultures	
World cinema:		
ANTH 331	Public Culture: Anthropology Through Film	
FREN 422	French Cinema	
GRMN 422	German Film	
ITAL 320	Italian Cinema: ____	
RELS 422	Religion and Film	
RUSS 422	Russian Film	
SPAN 422	Spanish and Latin American Cinema	
WRLD 422	National Cinema	
Total Hours		18

<sup>1</sup> Students must receive approval through the SWS Advising Office for topics courses counting toward the concentration.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Freshman year****Fall semester**

INTL 101	Human Societies and Globalization	3
or INTL 105	or International Relations	
or POLI 105	or Introduction to Anthropology	
or ANTH 103	or Introduction to Anthropology	
or INTL 103		
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved quantitative literacy		3-4
Foreign language 101 (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)		4
Term Hours:		14-15

**Spring semester**

HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
WRLD 210	International Social Justice Studies	3
Approved H&S human, social and political behavior		3-4

Foreign language 102 (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)	4
Term Hours:	14-15

**Sophomore year****Fall semester**

RELS 340 or INTL 341	Global Ethics and the World's Religions or Global Ethics and the World's Religions	3
UNIV 200	Inquiry and the Craft of Argument	3
WRLD 220	Human Rights and Literature	3
Approved H&S literature and civilization		3
Foreign language 201 (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)		3
Term Hours:		15

**Spring semester**

Approved H&S science and technology	3-4
Concentration elective	3
Experiential fine arts	1-3
Foreign language 202 (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)	3
Open electives	6
Term Hours:	16-19

**Junior year****Fall semester**

Approved H&S general education electives	6-8
Foreign language 300-level or higher (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)	3
Open electives	6
Term Hours:	15-17

**Spring semester**

On-campus or study abroad semester:

WRLD 302	Communicating Across Cultures (if not taking WRLD 391 during study abroad) (or open elective)	3
Concentration elective		3
Foreign language 300-level or higher (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)		3
Open electives		6
Term Hours:		15

**Summer semester**

optional study abroad (recommended):

Foreign language 300-level or higher (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)	0-3
Select one of the following:	0-3
WRLD 391 Topics in World Languages and Cultures	1-3
300-level foreign language course abroad	3
Term Hours:	0-6

**Senior year****Fall semester**

Concentration elective	3
Experiential learning requirement (if not already satisfied)	0-3
Foreign language course (300-level) (if pursuing minor) or open elective	3



Open electives	9
Term Hours:	15-18
<b>Spring semester</b>	
490 Seminar in International Issues (capstone)	3
Concentration elective	3
Foreign language course (300-level) (if pursuing minor) or open elective	3
Open electives	7-9
Term Hours:	16-18
Total Hours:	120-138

## International Studies, Bachelor of Arts (B.A.) with a concentration in Latin American studies

The international studies program offers a varied interdisciplinary humanities curriculum, global in scope and designed to increase students' knowledge about the cultures and traditions, languages, literature and media, history, values, concerns, and aspirations of peoples in different countries and regions of the world. The goal of the program is ultimately also to both broaden students' comparative intercultural perspectives and develop their cross-cultural communication abilities. Within each chosen concentration, the interdisciplinary range of offerings allows for flexibility in configuring each individual's course of study, which can be organized in a manner that best suits a student's particular needs.

### Learning outcomes

1. Knowledge regarding the interrelationship between local and global institutions, cultures, languages and religions
2. Knowledge regarding the differences and unity of human values, aspirations and concerns
3. Knowledge of local and global issues of social justice, human rights and sustainability
4. Development of reading, writing and oral communication skills
5. Development of ethical, critical and creative thinking skills
6. Development of global awareness and global citizenship

#### Upon completing this program:

1. Students will be able to critically analyze culturally specific and global issues from a variety of disciplinary perspectives.
2. Students will demonstrate knowledge of universals and differences in worldviews and ethical systems (values) across a range of cultures.
3. Students will acquire the cross-cultural communication skills and cultural sensitivity to interact effectively in international and/or multicultural settings, and to engage with cultural difference in an informed and compassionate fashion.

Students will attain a third-year college level proficiency in a second language in each of the four modalities: speaking, listening, reading and writing.

## Experiential learning and study abroad World Passport

As part of the School of World Studies' commitment to learning through engagement, each student within the school is required to complete

a World Passport to introduce him or her to a breadth of experience beyond the core curriculum: cultural opportunities, experiential learning, seminars and conferences, career workshops, international experiences, and multicultural campus activities. Students are required to obtain information about their personal World Passport from the School of World Studies Advising Office. The passport will be kept in the student advising file throughout the duration of study. It will be validated and approved by School of World Studies Advising Office prior to graduation, and then given to the student upon completion.

The passports are color-coded for **four required categories** of activities to be completed by students before graduation from VCU with a degree from the School of World Studies.

- **Professional preparation** prepares students for careers, graduate school and lifelong learning.
- **Crossing boundaries** exposes students to international and multicultural interactions and ideas to enhance their cultural competency.
- **Community engagement** enhances the undergraduate experience by greater involvement in the community.
- **Experiential learning** provides students the opportunity to demonstrate success in applying program content beyond a classroom setting.

The School of World Studies is committed to the premise that learning is best facilitated through engagement with the dynamic complexities and challenges of the world outside the classroom. Majors in the school are required to participate in experiential learning options. All experiential learning opportunities must receive prior approval from the SWS Advising Office and include internships, service-learning courses, certain noncredit options and study abroad.

### Study abroad

Study-abroad programs provide students with opportunities for short-term, semester-length and yearlong immersion in the language, culture and civilization of their chosen host country. A list of current VCU faculty-led and other study abroad opportunities can be found at [global.vcu.edu/abroad](http://global.vcu.edu/abroad) (<http://www.global.vcu.edu/abroad>). For more information about School of World Studies involvement in study abroad opportunities, visit [worldstudies.vcu.edu](http://worldstudies.vcu.edu) (<http://www.global.vcu.edu/abroad>).

### Special requirements

To earn a Bachelor of Arts in International Studies, students must complete 120 course credits, at least 36 of which must be in the major, with a minimum GPA of 2.25. Students must take at least 21 credits total of upper-level (300- or 400-level) courses within the major, with a minimum of **nine** credits at the upper level earned at VCU (not through transfer credit). The focus of a degree in international studies is interdisciplinary and should reflect a well-rounded mix of courses completed in a variety of disciplines (e.g. ANTH, HIST, POLI, SOCY, WRLD and foreign language).

International studies majors are encouraged to complete the course requirements for a minor that will broaden their international studies perspectives. Minor options are varied and may be chosen from a broad range of subject areas. Students also may want to consider a second major. Advisers will work with students to explore the benefits of a double major and a minor.

Students must fulfill an experiential learning requirement through an approved internship, service-learning course or study-abroad program.

Within the core requirements, students must complete six credits of foreign language study through the advanced level (300 level or higher). Native speakers of a language not taught at VCU can demonstrate fluency through evaluation to meet the requirement and then substitute six credits of additional course work chosen from the concentration electives to complete the degree. For students studying a foreign language not taught at VCU, or for which no upper-level courses are offered on campus, the School of World Studies advisers will assist the student in identifying appropriate language study options at other U.S. institutions or abroad. International studies majors also must fulfill the college general education requirements for the Bachelor of Arts degree.

To major in international studies, students must take course work that fulfills the requirements for the concentration chosen.

## Degree requirements for International Studies, Bachelor of Arts (B.A.) with a concentration in Latin American studies

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Approved H&S General Education electives		6-8
Experiential fine arts <sup>1</sup>		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Foreign language through the 202 or 205 level	0-6
Experiential learning requirement	0-3

World Passport completion	0
Total Hours	0-9

## Major requirements

### Core requirements for all international studies majors

Select one of the following:		3
INTL 101	Human Societies and Globalization	
INTL/POLI 105	International Relations	
ANTH/INTL 103	Introduction to Anthropology	
INTL 490	Seminar in International Issues (capstone)	3
RELS 340/INTL 341	Global Ethics and the World's Religions	3
WRLD 391	Topics in World Languages and Cultures (taken on a VCU-faculty led study abroad program)	3
or WRLD 302	Communicating Across Cultures	
Upper-level foreign language course work (300-level or higher)		6
<b>Concentration</b>		
Concentration electives (select courses to complete the requirements described in the electives lists below)		18
Total Hours		36

### Open electives

Select 28-52 open elective credits	28-52
------------------------------------	-------

## Total minimum requirement 120 credits

### Electives

The concentration in Latin American studies requires a total of 18 credits of interdisciplinary course work. A maximum of six credits within the concentration may be taken from the same discipline to fulfill these requirements.

Select a minimum of three credits from the following:		3
HIST 109	Survey of Latin American History	
HIST 110	Survey of Latin American History	
Select a minimum of three credits from the following:		3
ANTH 348	South American Ethnography	
ANTH 349	Rethinking a Continent: Latin America	
ANTH 391	Topics in Anthropology (when appropriate, e.g. Postcolonial Processes)	
Select a minimum of three credits from the following:		3
RELS 336	Religions in Latin America	
RELS 491	Topics in Religious Studies (when appropriate)	
Select a minimum of three credits from the following:		3
POLI 353	Latin American Governments and Politics	
SPAN 321	Latin American Civilization I	
SPAN 322	Hispanic Immigrants in the U.S.	
SPAN 331	Survey of Latin American Literature	
SPAN 332	Latino Writers in the U.S.	
SPAN 421	Civilization of Latin America II	
SPAN 422	Spanish and Latin American Cinema	
SPAN 430	Literary Genres (when appropriate)	

SPAN 491	Topics in Spanish (when appropriate, e.g., Gabriel Garcia Marquez or Hispanic Culture through Poetry)	
Select six credits from courses listed above or from the following:		6
ARTH 335	Pre-Columbian Art and Architecture	
ARTH 338	Colonial Art and Architecture of Latin America	
ARTH 339	Modern and Contemporary Art and Architecture of Latin America	
ARTH 450	Art and Architecture of Mesoamerica	
HIST 354	History of Native Americans in the South	
HIST 370	History of Central America	
HIST 371	History of Mexico	
HIST 372	History of Brazil	
HIST 373	History of the Andes to 1800	
HIST 374	History of the Andes From 1800	
HIST 376	Caribbean History to 1838	
HIST 377	Caribbean History Since 1838	
INTL 491	Topics in International Studies (when appropriate)	
POLI 391	Topics in Political Science (when appropriate)	
POLI 491	Topics in Political Science (when appropriate)	
URSP 331	Geography of Latin America and the Caribbean	
Total Hours		18

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

##### Fall semester

INTL 101	Human Societies and Globalization	3
or INTL 105	or International Relations	
or POLI 105	or Introduction to Anthropology	
or ANTH 103	or Introduction to Anthropology	
or INTL 103		
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved quantitative literacy		3-4
Foreign language 101 (Spanish or Portuguese)		4
Term Hours:		14-15

##### Spring semester

HIST 109	Survey of Latin American History	3
or HIST 110	or Survey of Latin American History	
HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3

Approved H&S diverse and global communities or approved H&S human, social and political behavior, whichever not satisfied above (ANTH/INTL 103 or INTL 101 or INTL/POLI 105 recommended)	3-4
--	-----

Foreign language 102 (Spanish or Portuguese)	4
--	---

Term Hours:	14-15
-------------	-------

#### Sophomore year

##### Fall semester

UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S literature and civilization		3
Concentration elective		3
Foreign language 201 (Spanish or Portuguese)		3
Open elective		3
Term Hours:		15

##### Spring semester

Approved H&S science and technology	3-4
Concentration elective	3
Experiential fine arts	1-3
Foreign language 202 (Spanish or Portuguese)	3
Open electives	6
Term Hours:	16-19

#### Junior year

##### Fall semester

RELS 340	Global Ethics and the World's Religions	3
or INTL 341	or Global Ethics and the World's Religions	
Approved H&S general education electives		6-8
Foreign language 300-level or higher (Spanish or Portuguese)		3
Open elective		3
Term Hours:		15-17

##### Spring semester

On-campus or study abroad semester:		
Concentration elective		3
Foreign language 300-level or higher (Spanish or Portuguese)		3
Open electives		6
Select one of the following:		3
WRLD 302	Communicating Across Cultures (if not taking WRLD 391 during study abroad)	-
Open elective		-
Term Hours:		15

##### Summer semester

Study abroad (recommended):		
Foreign language (300-level Spanish or Portuguese)		0-3
Select one of the following:		0-3
WRLD 391	Topics in World Languages and Cultures	-
300-level foreign language course abroad (Spanish or Portuguese)		-
Term Hours:		0-6

#### Senior year

##### Fall semester

SPAN 300-level (if pursuing Spanish minor) or open elective	3
Concentration elective	3
Experiential learning requirement (if not already satisfied)	0-3
Open electives	9
Term Hours:	15-18
<b>Spring semester</b>	
INTL 490 Seminar in International Issues (capstone)	3
SPAN 300-level (if pursuing Spanish minor) or open elective	3
Concentration elective	3
Open electives	7-9
Term Hours:	16-18
Total Hours:	120-138

## International Studies, Bachelor of Arts (B.A.) with a concentration in world cinema

The international studies program offers a varied interdisciplinary humanities curriculum, global in scope and designed to increase students' knowledge about the cultures and traditions, languages, literature and media, history, values, concerns, and aspirations of peoples in different countries and regions of the world. The goal of the program is ultimately also to both broaden students' comparative intercultural perspectives and develop their cross-cultural communication abilities. Within each chosen concentration, the interdisciplinary range of offerings allows for flexibility in configuring each individual's course of study, which can be organized in a manner that best suits a student's particular needs.

### Learning outcomes

1. Knowledge regarding the interrelationship between local and global institutions, cultures, languages and religions
2. Knowledge regarding the differences and unity of human values, aspirations and concerns
3. Knowledge of local and global issues of social justice, human rights and sustainability
4. Development of reading, writing and oral communication skills
5. Development of ethical, critical and creative thinking skills
6. Development of global awareness and global citizenship

#### Upon completing this program:

1. Students will be able to critically analyze culturally specific and global issues from a variety of disciplinary perspectives.
2. Students will demonstrate knowledge of universals and differences in worldviews and ethical systems (values) across a range of cultures.
3. Students will acquire the cross-cultural communication skills and cultural sensitivity to interact effectively in international and/or multicultural settings, and to engage with cultural difference in an informed and compassionate fashion.

Students will attain a third-year college level proficiency in a second language in each of the four modalities: speaking, listening, reading and writing.

## Experiential learning and study abroad World Passport

As part of the School of World Studies' commitment to learning through engagement, each student within the school is required to complete a World Passport to introduce him or her to a breadth of experience beyond the core curriculum: cultural opportunities, experiential learning, seminars and conferences, career workshops, international experiences, and multicultural campus activities. Students are required to obtain information about their personal World Passport from the School of World Studies Advising Office. The passport will be kept in the student advising file throughout the duration of study. It will be validated and approved by School of World Studies Advising Office prior to graduation, and then given to the student upon completion.

The passports are color-coded for **four required categories** of activities to be completed by students before graduation from VCU with a degree from the School of World Studies.

- **Professional preparation** prepares students for careers, graduate school and lifelong learning.
- **Crossing boundaries** exposes students to international and multicultural interactions and ideas to enhance their cultural competency.
- **Community engagement** enhances the undergraduate experience by greater involvement in the community.
- **Experiential learning** provides students the opportunity to demonstrate success in applying program content beyond a classroom setting.

The School of World Studies is committed to the premise that learning is best facilitated through engagement with the dynamic complexities and challenges of the world outside the classroom. Majors in the school are required to participate in experiential learning options. All experiential learning opportunities must receive prior approval from the SWS Advising Office and include internships, service-learning courses, certain noncredit options and study abroad.

### Study abroad

Study-abroad programs provide students with opportunities for short-term, semester-length and yearlong immersion in the language, culture and civilization of their chosen host country. A list of current VCU faculty-led and other study abroad opportunities can be found at [global.vcu.edu/abroad](http://global.vcu.edu/abroad) (<http://www.global.vcu.edu/abroad>). For more information about School of World Studies involvement in study abroad opportunities, visit [worldstudies.vcu.edu](http://worldstudies.vcu.edu) (<http://www.global.vcu.edu/abroad>).

### Special requirements

To earn a Bachelor of Arts in International Studies, students must complete 120 course credits, at least 36 of which must be in the major, with a minimum GPA of 2.25. Students must take at least 21 credits total of upper-level (300- or 400-level) courses within the major, with a minimum of **nine** credits at the upper level earned at VCU (not through transfer credit). The focus of a degree in international studies is interdisciplinary and should reflect a well-rounded mix of courses completed in a variety of disciplines (e.g. ANTH, HIST, POLI, SOCY, WRDL and foreign language).

International studies majors are encouraged to complete the course requirements for a minor that will broaden their international studies perspectives. Minor options are varied and may be chosen from a broad range of subject areas. Students also may want to consider a second

major. Advisers will work with students to explore the benefits of a double major and a minor.

Students must fulfill an experiential learning requirement through an approved internship, service-learning course or study-abroad program. Within the core requirements, students must complete six credits of foreign language study through the advanced level (300 level or higher). Native speakers of a language not taught at VCU can demonstrate fluency through evaluation to meet the requirement and then substitute six credits of additional course work chosen from the concentration electives to complete the degree. For students studying a foreign language not taught at VCU, or for which no upper-level courses are offered on campus, the School of World Studies advisers will assist the student in identifying appropriate language study options at other U.S. institutions or abroad. International studies majors also must fulfill the college general education requirements for the Bachelor of Arts degree.

To major in international studies, students must take course work that fulfills the requirements for the concentration chosen.

## Degree requirements for International Studies, Bachelor of Arts (B.A.) with a concentration in world cinema

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	3
UNIV 200 Inquiry and the Craft of Argument	3
Approved humanities/fine arts	3
Approved natural/physical sciences	3-4
Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
Total Hours	21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202 Choices in a Consumer Society	1
Approved H&S diverse and global communities	3
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)	
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Approved H&S General Education electives	6-8
Experiential fine arts <sup>1</sup>	1-3
Foreign language through the 102 level (by course or placement)	0-8
Total Hours	11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

Foreign language through the 202 or 205 level	0-6
Experiential learning requirement	0-3
World Passport completion	0
Total Hours	0-9

### Major requirements

#### Core requirements for all international studies majors

Select one of the following:	3
INTL 101 Human Societies and Globalization	
INTL/POLI 105 International Relations	
ANTH/INTL 103 Introduction to Anthropology	
INTL 490 Seminar in International Issues (capstone)	3
RELS 340/INTL 341 Global Ethics and the World's Religions	3
WRLD 391 Topics in World Languages and Cultures (taken on a VCU-faculty led study abroad program)	3
or WRLD 302 Communicating Across Cultures	
Upper-level foreign language course work (300-level or higher)	6
<b>Concentration</b>	
Concentration electives (select courses to complete the requirements described in the electives lists below)	18
Total Hours	36

### Open electives

Select 28-52 open elective credits	28-52
------------------------------------	-------

### Total minimum requirement 120 credits

#### Electives

<b>Required course work</b>	12
WRLD 230 Introduction to World Cinema	
WRLD 330 Introduction to Film Studies	
WRLD 422 National Cinema	
Select one of the following:	
WRLD 430 Film and the City	
WRLD 430 Film and the City	
WRLD 535 World Filmmakers	
Select two of the following:	6
ANTH 331 Public Culture: Anthropology Through Film	
ARTH 270 History of the Motion Picture I	
or ARTH 271 History of the Motion Picture II	
ENGL 385 Fiction into Film	
RELS 422 Religion and Film	
WRLD 422 National Cinema (course may be repeated with different themes)	
Select only one of the following:	
INTL 493 International Studies Internship (cinema-related)	
FRLG 493 World Languages Internship (cinema-related)	
WRLD 493 World Cultures Internship (cinema-related)	



Students are encouraged to fulfill the upper-level foreign language requirement by choosing film-related course work:

FREN 307	French Conversation and Film
GRMN 307	German Conversation and Film
ITAL 320	Italian Cinema: ____
SPAN 307	Spanish Conversation and Film

Total Hours	18
-------------	----

Students who meet the prerequisites for taking a 400-level course in foreign language may also consider taking a course from the following:

FREN 422	French Cinema	1-3
GRMN 422	German Film	1-3
RUSS 422	Russian Film	3
SPAN 422	Spanish and Latin American Cinema	1-3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

#### Fall semester

	Hours
INTL 101 Human Societies and Globalization	3
or INTL 105 or International Relations	
or POLI 105 or Introduction to Anthropology	
or ANTH 103 or Introduction to Anthropology	
or INTL 103	
UNIV 101 Introduction to the University	1
UNIV 111 Focused Inquiry I	3
Approved quantitative literacy	3-4
Foreign language 101 (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)	4
Term Hours:	14-15

#### Spring semester

HUMS 202 Choices in a Consumer Society	1
UNIV 112 Focused Inquiry II	3
Approved H&S diverse and global communities or approved H&S human, social and political behavior, whichever not satisfied above (ANTH/INTL 103 or INTL 101 or INTL/POLI 105 recommended)	3-4
Approved H&S general education elective	3
Experiential fine arts	1-3
Foreign language 102 (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)	4
Term Hours:	15-18

### Sophomore year

#### Fall semester

UNIV 200 Inquiry and the Craft of Argument	3
WRLD 230 Introduction to World Cinema (fulfills approved H&S literature and civilization)	3
Approved H&S general education elective	3

Foreign language 201 (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)	3
Open elective	3

Term Hours:	15
-------------	----

#### Spring semester

WRLD 330 Introduction to Film Studies	3
Approved H&S science and technology	3-4
Concentration elective (ARTH 270 or ARTH 271 History of the Motion Picture recommended)	3
Foreign language 202 (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)	3
Open elective	3
Term Hours:	15-16

### Junior year

#### Fall semester

RELS 340 Global Ethics and the World's Religions	3
or INTL 341 or Global Ethics and the World's Religions	
WRLD 430 Film and the City	3
or WRLD 530 or Concepts in World Cinema	
or WRLD 535 or World Filmmakers	
Foreign language 300-level or higher (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)	3
Open electives	6
Term Hours:	15

#### Spring semester

On-campus or study abroad semester:

Select one of the following:	3
WRLD 302 Communicating Across Cultures (if not taking WRLD 391 during study abroad)	-
Open elective	-
WRLD 422 National Cinema	3
Foreign language 300-level or higher (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)	3
Open electives	6
Term Hours:	15

#### Summer semester

Optional study abroad (recommended):

Select one of the following:	0-3
WRLD 391 Topics in World Languages and Cultures	-
300-level foreign language course abroad	-
Select one of the following:	0-3
WRLD 422 National Cinema (if not already completed)	-
300-level foreign language course (FREN, GRMN, ITAL, LATN, PORT, RUSS, SPAN)	-
Term Hours:	0-6

### Senior year

#### Fall semester

Concentration elective (ANTH 331 Anthropology Through Film or RELS 422 Religion and Film recommended)	3
Experiential learning requirement (if not already satisfied)	0-3

Foreign language course (300-level) (if pursuing minor in FREN, GRMN, ITAL, LATN, PORT, RUSS or SPAN) or open elective

Open electives 9

Term Hours: 15-18

#### Spring semester

INTL 490 Seminar in International Issues (capstone) 3

Foreign language course (300-level) (if pursuing minor in FREN, GRMN, ITAL, LATN, PORT, RUSS or SPAN) or open elective 3

Open electives 10-12

Term Hours: 16-18

Total Hours: 120-136

## Religious Studies, Bachelor of Arts (B.A.)

**Isabelle Richman**

Instructor and program coordinator

[worldstudies.vcu.edu/academics/relstudies](http://worldstudies.vcu.edu/academics/relstudies) (<http://worldstudies.vcu.edu/academics/religious-studies>)

The mission of the Religious Studies Program at VCU is to advance understanding of the nature, history and diversity of religious traditions.

Religious studies is guided by the idea that studying humanity's diverse and developing religious traditions is vital to understanding what it means to be human and how to live wisely as members of the world community. Students explore the artistic, ethical, literary, psychological and social dimensions of religions, as well as the relationship between religious ideas, institutions, and practices and matters of gender, sexuality, race, nationality, health, social justice, human rights and nature.

Religious studies emphasizes excellence in written, oral and visual interpretation and communication, critical thinking, informed dialogue, and global citizenship. Combining classroom- and community-based learning through study-abroad programs, internships and community service, religious studies empowers students to engage intellectually and practically with diverse communities and work to build a peaceful, generous and affirming society.

## Learning outcomes

1. Demonstrate knowledge of diverse religious traditions
2. Utilize the vocabulary, concepts and research methods of the academic study of religion
3. Analyze the influence of religions on ethics, society and culture
4. Make clear, well-organized and substantive written and oral presentations

## Special requirements

The Bachelor of Arts in Religious Studies requires a minimum of 120 credits, with at least 33 credits in religious studies courses or in courses listed as acceptable for religious studies credit. Up to six of the 33 credits may be taken in language studies relevant to one's area of research interest and with the appropriate approval through the School of World Studies Advising Office. Other courses occasionally may be substituted should the needs and background of an individual student warrant substitutions. Religious studies majors are encouraged to consider a second major or minor that complements their study of religions (e.g.

English, international studies), as well as study-abroad opportunities to enrich their studies.

## Degree requirements Religious Studies, Bachelor of Arts (B.A.)

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111 Play course video for Focused Inquiry I	Focused Inquiry I	3
UNIV 112 Play course video for Focused Inquiry II	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
	Approved humanities/fine arts	3
	Approved natural/physical sciences	3-4
	Approved quantitative literacy	3-4
	Approved social/behavioral sciences	3-4
Total Hours		21-24

#### Additional College of Humanities and Sciences requirements (11-23 credits)

HUMS 202	Choices in a Consumer Society	1
	Approved H&S diverse and global communities	3
	Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)	
	Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
	Approved H&S science and technology (fulfills University Core natural/physical sciences)	
	Approved H&S General Education electives	6-8
	Experiential fine arts <sup>1</sup>	1-3
	Foreign language through the 102 level (by course or placement)	0-8
Total Hours		11-23

<sup>1</sup> Course offered by the School of the Arts

### Collateral requirements

#### Experiential learning

Select one of the following:		0-3
	Major-specific service-learning course	
	Study abroad program	
	Approved internship opportunities such as the following:	
FRLG 493	World Languages Internship	
INTL 493	International Studies Internship	
RELS 493	Religious Studies Internship	
WRLD 493	World Cultures Internship	
	Or other pre-approved internship opportunities	

#### World Passport

Students must complete the School of World Studies World Passport		0
Total Hours		0-3

**Major requirements**

RELS 108	Human Spirituality	3
RELS/INTL 311	Religions of the World (Eastern religions)	3
RELS/INTL 312	Religions of the World (Western religions)	3
RELS 340/INTL 341	Global Ethics and the World's Religions	3
RELS 490	Senior Capstone Seminar	3
Select two religion, society, and culture electives from the list below		6
RELS electives: Select an additional four courses from the list below, with at least six credits at the 400-level		12
Total Hours		33

**Open electives**

Select 38-55 open elective credits	38-55
------------------------------------	-------

**Total minimum requirement 120 credits****Electives****Religion, society, and culture**

RELS 250	Death: Myth and Reality	3
RELS/PSYC 333	Psychology and Religious Experience	3
RELS 334	Religion in Contemporary America	3
RELS 336	Religions in Latin America	3
RELS 337	Contemporary Cults and New Religious Movements	3
RELS/SOCY 360	Sociology of Religion	3
RELS 361	The Bible as Literature	3
RELS/GSWs 371	Women in Islam	3
RELS/GSWs/INTL 372	Global Women's Spirituality	3
RELS 422	Religion and Film	3
RELS 450/INTL 449	Religion, Globalization and Social Justice	3
RELS/AFAM/INTL 451	Religion, Racism and Social Justice	3
RELS/GSWs/INTL 453	Western Religions, Women and Social Justice	3

**RELS electives**

HIST 336	History of Christianity II	3
RELS 280	Introduction to Catholic Studies	3
RELS 301	Introduction to the Hebrew Bible	3
RELS 302	Introduction to the New Testament	3
RELS 305	Hebrew Prophets	3
RELS 306	Introduction to Judaism	3
RELS/AFAM/INTL 307	Black Religion	3
RELS 308/HIST 311	High and Later Middle Ages	3
RELS 313	Life and Literature of Paul	3
RELS 314	Jesus in the New Testament	3
RELS 315/HIST 301	The Ancient Near East	3
RELS/INTL 317	Islam	3
RELS 318/HIST 333	History of the Jewish People I	3
RELS 319/HIST 334	History of the Jewish People II	3

RELS 320	Taoism	3
RELS/PHIL 322	Tibetan Buddhism	3
RELS/PHIL 326	Existentialism	3
RELS 327/HIST 335	History of Christianity I	3
RELS 335	The American Jewish Experience	3
RELS/PHIL 342		
RELS 350/INTL 360	World Classics of Spirituality	3
RELS 362	Shakespeare and Religion	3
RELS 363	Archaeology and Sacred Texts	3
RELS 368		
RELS/GSWs 373	Gender and the Bible	3
RELS 380	Contemporary Catholic Thought	3
RELS/LFSC 401	Faith and Life Sciences	3
RELS 407	Modern Jewish Thought	3
RELS/PHIL 408	Indian Tradition	3
RELS/INTL 409	Modern Islamic Thought and Global Trends	3
RELS/PHIL/INTL 410	The Chinese Tradition in Philosophy	3
RELS/PHIL/INTL 412	Zen Buddhism	3
RELS/ANTH/INTL 425	Religion, Magic and Witchcraft	3
RELS/PHIL 430	Philosophy of Religion	3
RELS/PHIL 440	Mysticism	3
RELS/INTL 441	Islamic Mysticism: the Sufis	3
RELS 442	Seminar in Hinduism	3
RELS 455/INTL 456	Catholic Ethics and Social Justice	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Freshman year**

Fall semester		Hours
RELS 108	Human Spirituality (fulfills H&S diverse and global communities)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved quantitative literacy		3-4
Foreign language (101-level)		4
Term Hours:		14-15

**Spring semester**

HUMS 202	Choices in a Consumer Society	1
RELS 311 or RELS 312	Religions of the World or Religions of the World	3
UNIV 112	Focused Inquiry II	3
Approved H&S human, social and political behavior		3
Foreign language (102-level)		4
Term Hours:		14

**Sophomore year**

Fall semester		Hours
RELS 311 or RELS 312	Religions of the World or Religions of the World	3

UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S General Education elective		3
Approved H&S science and technology		3-4
Foreign language (201-level)		3
Term Hours:		15-16
<b>Spring semester</b>		
RELS 340	Global Ethics and the World's Religions	3
Approved H&S General Education elective		3
Experiential fine arts		1-3
Foreign language (202-level)		3
Open elective		3
Religion, society and culture elective		3
Term Hours:		16-18
<b>Junior year</b>		
<b>Fall semester</b>		
RELS elective		3
Open electives		9
Religion, society and culture elective		3
Term Hours:		15
<b>Spring semester</b>		
On-campus or study abroad semester		
RELS elective		3
Open electives		12
Term Hours:		15
<b>Summer semester</b>		
Study abroad (recommended)		0-6
Term Hours:		0-6
<b>Senior year</b>		
<b>Fall semester</b>		
RELS elective (400-level)		3
Open electives		12
Term Hours:		15
<b>Spring semester</b>		
RELS 490	Senior Capstone Seminar	3
RELS elective (400-level)		3
Open electives		10
Term Hours:		16
Total Hours:		120-130

## International Management Studies, Certificate in (Undergraduate certificate)

The certificate program in international management studies is an interdisciplinary program offered by the Department of Management in the School of Business and the School of World Studies in the College of Humanities and Sciences. The certificate program combines international management, foreign languages and European studies into a unique program intended to equip students for careers in international business. Students concentrating in liberal arts or business programs, as well as other majors, are encouraged to apply.

Certification through this program requires 33 to 36 hours of approved credits from the list of courses given below. Students may enroll in

this program and take courses while enrolled in another undergraduate program at the university, but must choose the same country track for European studies and foreign language courses.

For more information, contact Charles M. Byles, D.B.A., of the Department of Management at (804) 828-7125 or [cmbytes@vcu.edu](mailto:cmbytes@vcu.edu), or Patricia Cummins, Ph.D., of the School of World Studies at (804) 827-0958 or [pcummins@vcu.edu](mailto:pcummins@vcu.edu), or visit the program's website: [www.cim.bus.vcu.edu](http://www.cim.bus.vcu.edu) (<http://www.cim.bus.vcu.edu>).

## Course requirements

### European studies

Select three of the following (at least one course must be specific to one of the following country tracks: France, Germany or Spain):

EUCU 307	Aspects of German Culture
FREN 420	French Regional Culture
FREN 421	French Contemporary Culture
GRMN 421	The Postwar German Scene
HIST 102	Survey of European History
HIST 316	Postwar Europe, 1945 to the Present
HIST 317	History of France I
HIST 319	History of Germany I
HIST 329	History of Spain and Portugal
HIST 330	History of Women in Europe I
POLI/INTL 352	European Governments and Politics
SPAN 420	Civilization of Spain II
URSP/INTL 334	Regional Geography of ____

Total Hours 9

### Foreign languages

Select one of the following language tracks:

French:		
FREN 300	Advanced Grammar and Writing	
FREN 321	French Civilization and Culture II	
FREN 440	Commercial French	
German		
GRMN 300	Composition and Communication	
GRMN 301	Grammar and Writing	
GRMN 314	Commercial German	
GRMN 321	From Faust to Nazism: Civilization and Literature II	
Spanish		
SPAN 300	Advanced Grammar and Writing	
SPAN 320	Civilization of Spain I	
SPAN 414	Commercial Spanish	

Total Hours 9

### International management

MGMT 310	Managing People in Organizations	3
MGMT/INTL 418	International Management	3

SCMA 329/INTL 327	Introduction to Intercultural Communication	3
Total Hours		9

## Experiential learning

Select one of the following courses on ways to apply program content to international management settings:

INTL 493	International Studies Internship	3
MGMT/INTL 491	Topics in Management (Study Abroad)	
Or an approved service-learning course from the following:		
FREN 300	Advanced Grammar and Writing	
RELS 340/INTL 341	Global Ethics and the World's Religions	
SPAN/LING 402	Language Issues in the Spanish-speaking World	3
Or other approved courses		
Total Hours		3

## Language/cultural immersion experience

Students must complete an approved language/cultural immersion experience by which they demonstrate the successful application of foreign language, cross cultural and management skills. This demonstration can be achieved through the following:

Select one of the following:	0-3
An overseas internship	
A service-learning course	
Previous life experience	
An approved study abroad program such as the following:	
MGMT/INTL 491	Topics in Management

## Core course in international management

Students must complete the following integrative course, which should be taken toward the end of the program.

MGMT/INTL 419	Doing Business in Europe	3
---------------	--------------------------	---

## Total minimum requirement 33-36 credits

# Spanish/English Translation and Interpretation, Certificate in (Undergraduate certificate)

The certificate program prepares advanced Spanish students for further study, national certification exams and/or future employment in these growing fields. The program combines theoretical and applied course work with applied practice in the community, allowing students to hone their skills in a specialization of their choice or to apply for the certificate in general translation and interpretation. Students with advanced-level Spanish and English skills who are concentrating in liberal arts or professional programs as well as other majors are encouraged to apply.

This certificate program requires 27 credits, distributed as shown below, and successful completion of a comprehensive exit exam. Students may earn this certificate concurrently with a baccalaureate degree in another undergraduate program at the university, or may earn the certificate independently from another degree, provided the student

has a baccalaureate degree from any institution. The nine-course sequence focuses on the knowledge and skills needed for translation and interpretation in any field, including intensive grammar review, translation theories and approaches, research methods, computer-assisted translation tools, simultaneous interpretation, consecutive interpretation, and sight translation. Students in the advanced interpretation courses (legal and medical) receive further instruction in terminology related to their areas of interest. The internship requires 120 clock hours of work including translation and/or interpretation practice.

### Prerequisite courses

SPAN 301	Advanced Grammar and Writing	3
Select one literature course from the following:		3
SPAN 330	Survey of Spanish Literature	3
SPAN 331	Survey of Latin American Literature	
SPAN 332	Latino Writers in the U.S.	
Select one civilization course from the following:		3
SPAN 320	Civilization of Spain I	3
SPAN 321	Latin American Civilization I	
SPAN 322	Hispanic Immigrants in the U.S.	

### Core courses

SETI 400	Spanish-English Comparative Grammar	3
SETI 410	Introduction to Spanish-English Translation	3
SETI 420	Introduction to Spanish-English Interpretation	3
SETI 493	SETI Internship	3
<b>Elective courses</b>		
Select two of the following:		6
SETI 411	Intermediate Translation	
SETI 421	Intermediate Interpretation	
SETI 422	Legal Interpretation	
SETI 423	Medical Interpretation	

Total Hours		27
-------------	--	----

For more information, contact the School of World Studies Advising Office at (804) 827-1111.

## African studies, minor in

The African studies minor consists of 18 credits. A minimum of 12 credits must be earned at the upper (300- or 400-) level. No more than six credits can be earned within the same discipline.

**Note:** Language Placement Test results cannot substitute for completion of course work.

Select a minimum of three credits of geographically pertinent foreign language course work at the advanced level (300 or above) <sup>1</sup>

Select 15 credits from the following:		15
AFAM 413/ARTH 350	African and Oceanic Art	
ANTH/AFAM/INTL 200	Introduction to African Societies	
ANTH 391	Topics in Anthropology <sup>2</sup>	
ANTH/AFAM/INTL 420	Women of Africa	



FLET/INTL 391	Topics in Foreign Literature in English Translation <sup>2</sup>	
FREN 421	French Contemporary Culture <sup>2</sup>	
FREN/INTL 450	Francophone Literatures and Cultures <sup>2</sup>	
HIST/AFAM 105	Survey of African History	
HIST/AFAM 106	Survey of African History	
INTL 591	Topics in International Studies <sup>2</sup>	
POLI/AFAM/INTL 356	Government and Politics of Africa	
POLI/AFAM/INTL 357	Politics of Southern Africa	
WRLD/INTL 203	Cultural Texts and Contexts: ____ <sup>2</sup>	
WRLD 220	Human Rights and Literature <sup>2</sup>	
WRLD 391	Topics in World Languages and Cultures <sup>2</sup>	
WRLD 491	Topics in World Languages and Cultures <sup>2</sup>	
Total Hours		18

<sup>1</sup> If this level of instruction is not available in a chosen language at the university, the School of World Studies Advising Office will assist students in identifying appropriate language study options at other U.S. institutions or abroad. Geographically pertinent foreign languages not taught at VCU will be considered on a case-by-case basis.

<sup>2</sup> When appropriate: Always check first with the SWS Advising Office before enrolling in these courses.

Courses taken through an accredited study abroad program in an appropriate location (must be preapproved through the SWS Advising Office)

## Anthropology, minor in

An anthropology minor shall consist of 18 credits in anthropology (with at least six of these credits taken in the anthropology program at VCU), including:

ANTH 103	Introduction to Anthropology	3
Select two of the following:		6
ANTH 105	Introduction to Archaeology	
ANTH 210	Biological Anthropology	
ANTH 220	Cultural Anthropology	
ANTH 230	Anthropological Linguistics	
Select nine additional upper-level ANTH credits (300-, 400- or 500-level)		9
Total Hours		18

## Arabic and Middle Eastern studies, minor in

The Arabic and Middle Eastern Studies minor consists of 21 credits. A minimum of 12 credits must be earned at the upper (300- or 400-) level.

Native speakers of Arabic may not use intermediate credit in the language to count toward the minor.

**Note:** Language Placement Test results cannot substitute for completion of course work.

Select a minimum of three credits of Arabic at the advanced level (300 or above)		3
Select 18 credits from the following (no more than six credits can be earned within the same discipline):		18
ARBC 202	Intermediate Arabic II <sup>1</sup>	
or ARBC 205	Intermediate Conversation	
ANTH/INTL 455	Anthropology of Development and Globalization <sup>2</sup>	
ECON/INTL 329	International Economics <sup>2</sup>	
FLET/INTL 391	Topics in Foreign Literature in English Translation <sup>2</sup>	
FREN/INTL 450	Francophone Literatures and Cultures <sup>2</sup>	
FREN 491	Topics in French <sup>2</sup>	
GSWS/POLI 366/INTL 368	Women and Global Politics	
HIST 301/RELS 315	The Ancient Near East	
HIST 302	Ancient Egypt	
HIST 341	Modern Middle East	
HIST 389	History in Film: ____ <sup>2</sup>	
INTL 201	Introduction to the Middle East and North Africa	
POLI/INTL 351	Governments and Politics of the Middle East	
POLI/INTL 361	Issues in World Politics <sup>2</sup>	
POLI/CRJS 367/HSEP 301	Terrorism	
RELS 301	Introduction to the Hebrew Bible	
RELS 302	Introduction to the New Testament	
RELS 305	Hebrew Prophets	
RELS/INTL 306	Introduction to Judaism	
RELS 310	Mediterranean Religions	
RELS 312	Religions of the World (Western)	
RELS/INTL 317	Islam	
RELS 318/HIST 325	History of the Jewish People I	
RELS 319/HIST 326	History of the Jewish People II	
RELS/HIST 327	History of Christianity I	
RELS 340/INTL 341	Global Ethics and the World's Religions <sup>2</sup>	
RELS/GSWS 371	Women in Islam	
RELS 407	Modern Jewish Thought	
RELS/INTL 409	Modern Islamic Thought and Global Trends	
RELS 491	Topics in Religious Studies <sup>2</sup>	
URSP 350/FRLG 345/INTL 345	Great Cities of the World <sup>2</sup>	
WRLD 220	Human Rights and Literature <sup>2</sup>	
WRLD 391	Topics in World Languages and Cultures <sup>2</sup>	

WRLD 491	Topics in World Languages and Cultures <sup>2</sup>	
Total Hours		21

<sup>1</sup> The prerequisite course of ARBC 202 or ARBC 205 may be counted toward the total number of credits for the minor.

<sup>2</sup> When appropriate: Always check first with the SWS Advising Office before enrolling in these courses.

Courses taken through an approved study abroad program in an appropriate location (must be preapproved through the SWS Advising Office)

## Asian and Chinese studies, minor in

The Asian and Chinese studies minor consists of 21 credits. A minimum of 12 credits must be earned at the upper (300- or 400-) level.

Native speakers of Chinese may not use intermediate credit in the language to count toward the minor.

**Note:** Language Placement Test results cannot substitute for completion of course work.

Select a minimum of three credits of Chinese at the advanced level (300 or above) 3

RELS 311	Religions of the World	3
----------	------------------------	---

Select 15 credits from the following (no more than six credits can be earned within the same discipline): 15

CHIN 202	Intermediate Chinese <sup>1</sup>	
Select a minimum of three credits from the following:		
HIST 107	Survey of East Asian Civilizations	
HIST 108	Survey of East Asian Civilizations	
HIST 201	The Art of Historical Detection: ____ <sup>2</sup>	
HIST 379	The History of Modern Japan	
HIST 386	History of Late Imperial China, 900-1800	
HIST 387	The History of Modern China, 1800 to the Present	
HIST 389	History in Film: ____ <sup>2</sup>	
HIST 391	Topics in History <sup>2</sup>	
POLI/INTL 355	Asian Governments and Politics	
POLI 359/INTL 452	The Politics of Developing Areas	
POLI/INTL 364	Vietnam	
Select a minimum of three credits from the following:		
ARTH 245	Survey of Asian Art	
ARTH 449	Studies in Asian Art	
FLET/INTL 391	Topics in Foreign Literature in English Translation <sup>2</sup>	
RELS 320	Taoism	
RELS/PHIL 322	Tibetan Buddhism	
RELS/PHIL 342		
RELS 368		
RELS/PHIL/INTL 410	The Chinese Tradition in Philosophy	
RELS/PHIL/INTL 412	Zen Buddhism	

RELS 442	Seminar in Hinduism	
WRLD/INTL 203	Cultural Texts and Contexts: ____ <sup>2</sup>	
WRLD 220	Human Rights and Literature <sup>2</sup>	
WRLD 391	Topics in World Languages and Cultures <sup>2</sup>	
WRLD 491	Topics in World Languages and Cultures <sup>2</sup>	
Total Hours		21

<sup>1</sup> The prerequisite course of CHIN 202 may be counted toward the total number of credits for the minor.

<sup>2</sup> When appropriate: Always check first with the SWS Advising Office before enrolling in these courses.

Courses taken through an accredited study abroad program in an appropriate location (must be preapproved through the SWS Advising Office).

## European studies, minor in

The European studies minor consists of 18 credits. A minimum of 12 credits must be earned at the upper (300- or 400-) level. No more than six credits can be earned within the same discipline.

Geographically pertinent foreign languages not taught at VCU will be considered on a case-by-case basis through the School of World Studies Advising Office.

**Note:** Language Placement Test results cannot substitute for completion of course work.

Select a minimum of three credits of geographically pertinent foreign language course work at the advanced level (300 or above) 3

Select 15 credits from the following: 15

Select a minimum of three credits from the following:		
HIST 101	Survey of European History	
HIST 102	Survey of European History	
HIST 310	The Early Middle Ages	
HIST 311	High and Later Middle Ages	
HIST 312	Europe in the Early Modern Period, 1350-1650	
HIST 313	Europe in Absolutism and Enlightenment, 1648-1815	
HIST 314	The Zenith of European Power, 1815-1914	
HIST 315	The Age of Total War in Europe, 1914-1945	
HIST 316	Postwar Europe, 1945 to the Present	
HIST 317	History of France I	
HIST 318	History of France II	
HIST 319	History of Germany I	
HIST 320	History of Germany II	
HIST 321	The Holocaust	
HIST 322	Nazi Germany	
HIST 324	History of Early Modern Britain	
HIST 325	History of Modern Britain	
HIST 327	History of Russia I	

HIST 328	History of Russia II
HIST 329	History of Spain and Portugal
HIST 330/GSWS 339	History of Women in Europe I
HIST 331/GSWS 340	History of Women in Europe II
Select a minimum of three credits from the following:	
ANTH/INTL 455	Anthropology of Development and Globalization <sup>1</sup>
INTL 490	Seminar in International Issues <sup>1</sup>
INTL 491	Topics in International Studies <sup>1</sup>
MKTG/INTL 320	International Marketing
POLI/INTL 352	European Governments and Politics
POLI/INTL 354	Russian and Post-Soviet Politics
RELS 310	Mediterranean Religions
URSP 350/FRLG 345/INTL 345	Great Cities of the World <sup>1</sup>
WRLD/INTL 203	Cultural Texts and Contexts: ____ <sup>1</sup>
WRLD 391	Topics in World Languages and Cultures <sup>1</sup>
WRLD 491	Topics in World Languages and Cultures <sup>1</sup>
Select a minimum of three credits from the following:	
FREN 320	French Civilization and Culture I
FREN 321	French Civilization and Culture II
FREN 330 & FREN 331	Survey of Literature and Survey of Literature
FREN 420	French Regional Culture
FREN 421	French Contemporary Culture
FREN 425	French Media
FREN/INTL 450	Francophone Literatures and Cultures <sup>1</sup>
GRMN 320	From the Vandals to Kant: Civilization and Literature I
GRMN 321	From Faust to Nazism: Civilization and Literature II
GRMN 322	From Kafka's World to the EU: Civilization and Literature III
GRMN 420	The Turn of the Century
GRMN 423	Folk/Popular Culture
GRMN 424	Culture and Society
INTL/FLET 391	Topics in Foreign Literature in English Translation <sup>1</sup>
ITAL 320	Italian Cinema: ____
ITAL 330	Themes in Italian Literature: ____
ITAL 391	Topics in Italian
RUSS 311	Conversation and Media
RUSS 330	Literature and Culture: ____
RUSS 422	Russian Film
RUSS 491	Topics in Russian
SPAN 320	Civilization of Spain I
SPAN 330	Survey of Spanish Literature
SPAN 420	Civilization of Spain II

WRLD 230	Introduction to World Cinema
Total Hours	18

<sup>1</sup> When appropriate: Always check first with the SWS Advising Office before enrolling in these courses.

Courses taken through an approved study abroad program in an appropriate location (must be pre-approved through the SWS Advising Office).

Students majoring in art history may apply three credits of an art history course relevant to Europe toward the minor. The art history course must be approved through the SWS Advising Office.

## French, minor in

A minor in French requires at least 18 credits in the chosen language, none of which may be earned at the 100 level.

FREN 201	Intermediate French	3
FREN 202	Intermediate French Readings	3
or FREN 205	Intermediate Conversation	
Select at least 12 credits at the 300 level or above		12
Total Hours		18

Note: Language Placement Test results cannot substitute for completion of course work. Foreign language minors must take at least two upper-level courses at VCU in the chosen language area.

## German, minor in

A minor in German requires at least 18 credits in the chosen language, none of which may be earned at the 100 level.

GRMN 201	Intermediate German	3
GRMN 202	Intermediate German II	3
or GRMN 205	Intermediate Conversation	
Select at least 12 credits at the 300 level or above		12
Total Hours		18

Note: Language Placement Test results cannot substitute for completion of course work. Foreign language minors must take at least two upper-level courses at VCU in the chosen language area.

## International social justice studies, minor in

The international social justice studies minor consists of 18 credits. A minimum of 12 credits must be earned at the upper (300- or 400-) level. No more than six credits can be earned within the same discipline.

Students must complete a minimum of three credits of foreign language course work at the advanced level (300 or above).

**Note:** Language Placement Test results cannot substitute for completion of course work.

Students choose from the following courses to complete the minor:

Select a minimum of three credits from the following:		3-6
WRLD 210	International Social Justice Studies	

WRLD 220	Human Rights and Literature	
Select a minimum of three credits from the following:		3-6
RELS 450/INTL 449	Religion, Globalization and Social Justice	
RELS/AFAM/INTL 451	Religion, Racism and Social Justice	
RELS/GSWs/INTL 453	Western Religions, Women and Social Justice	
RELS 455/INTL 456	Catholic Ethics and Social Justice	
Select three different three-credit courses, one from at least three of the following interest areas:		9
History, gender, race and religion:		
AFAM/SOCY/GSWs 305	African American Family in Social Context	
AFAM/ANTH/INTL/GSWs 309	Global Women's Health	
ANTH/AFAM/INTL 200	Introduction to African Societies	
ANTH/AFAM/INTL 420	Women of Africa	
FLET/INTL 391	Topics in Foreign Literature in English Translation	
HIST 365/GSWs 341	American Women's History I	
HIST 380/AFAM 390/GSWs 390	Africa and the Americas: Slavery, Gender and Race	
POLI/GSWs 366/INTL 368	Women and Global Politics	
RELS 340/INTL 341	Global Ethics and the World's Religions	
GSWS 301	Feminist Social Theory	
GSWS/AFAM/POLI 318	Politics of Race, Class and Gender	
WRLD 391	Topics in World Languages and Cultures	
Literature:		
AFAM/ENGL 363/INTL 366	African Literature	
AFAM/ENGL 365/INTL 367	Caribbean Literature	
FLET/INTL 391	Topics in Foreign Literature in English Translation	
FREN/INTL 450	Francophone Literatures and Cultures <sup>1</sup>	
SPAN 322	Hispanic Immigrants in the U.S.	
SPAN 332	Latino Writers in the U.S.	
SPAN 491	Topics in Spanish <sup>1</sup>	
Politics and globalization:		
AFAM/POLI 302	Politics of the Civil Rights Movement	
ANTH/INTL 349	Rethinking a Continent: Latin America	
ANTH/INTL 350	Rethinking a Continent: Europe	
ANTH/INTL 455	Anthropology of Development and Globalization	
MASC/WRLD 359	International Media Coverage: The Middle East	

POLI/AFAM/INTL 356	Government and Politics of Africa	
POLI/AFAM/INTL 357	Politics of Southern Africa	
POLI/INTL 365	International Political Economy	
POLI/GSWs 366/INTL 368	Women and Global Politics	
World cinema:		
ANTH 331	Public Culture: Anthropology Through Film	
FREN 422	French Cinema	
GRMN 422	German Film	
ITAL 320	Italian Cinema: ____	
RELS 422	Religion and Film	
RUSS 422	Russian Film	
SPAN 422	Spanish and Latin American Cinema	
WRLD 422	National Cinema	
Topics courses:		
ANTH 391	Topics in Anthropology <sup>1</sup>	
FLET/INTL 391	Topics in Foreign Literature in English Translation <sup>1</sup>	
FREN 491	Topics in French <sup>1</sup>	
GRMN 491	Topics in German <sup>1</sup>	
RELS 391	Topics in Religious Studies <sup>1</sup>	
RELS 490	Senior Capstone Seminar <sup>1</sup>	
RELS 491	Topics in Religious Studies <sup>1</sup>	
RUSS 491	Topics in Russian <sup>1</sup>	
WRLD 491	Topics in World Languages and Cultures <sup>1</sup>	
Total Hours		15-21

<sup>1</sup> Students must receive approval through the SWS Advising Office for topics courses counting toward the minor.

## Italian studies, minor in

A minor in Italian studies requires at least 18 credits, none of which can be earned at the 100 level.

ITAL 201	Intermediate Italian	3
ITAL 202	Intermediate Italian Readings	3
or ITAL 205	Intermediate Conversation	
Select at least six credits at the 300 level or above from courses taught in Italian		6
Select six credits from courses taught in either Italian or English		6
Total Hours		18

Courses taught in English must focus on subjects related to Italian culture, such as literature in translation, cultural studies or Italian cinema.

**Note:** Language placement test results cannot substitute for completion of course work. Italian studies minors must take at least two upper-level courses at VCU in Italian.

## Latin American studies, minor in

The Latin American studies minor consists of 18 credits. A minimum of 12 credits must be earned at the upper (300- or 400-) level. No more than six credits can be earned within the same discipline.

Students must complete a minimum of three credits of Spanish or Portuguese at the advanced level (300 or above).

**Note:** Language Placement Test results cannot substitute for completion of course work.

Students choose from the following courses to complete the minor:

Select a minimum of three credits from the following:		3
PORT 391	Topics in Portuguese <sup>1</sup>	
SPAN 321	Latin American Civilization I	
SPAN 322	Hispanic Immigrants in the U.S.	
SPAN/INTL 331	Survey of Latin American Literature	
SPAN 332	Latino Writers in the U.S.	
SPAN/INTL 421	Civilization of Latin America II	
SPAN 430	Literary Genres <sup>1</sup>	
SPAN 432	Hispanic Culture Through Literature	
SPAN 491	Topics in Spanish <sup>1</sup>	
Select a minimum of three credits from the following:		3
ANTH/INTL 348	South American Ethnography	
ANTH/INTL 349	Rethinking a Continent: Latin America	
ANTH 391	Topics in Anthropology <sup>1</sup>	
Select a minimum of three credits from the following:		3
HIST 109	Survey of Latin American History	
HIST 110	Survey of Latin American History	
HIST 391	Topics in History <sup>1</sup>	
Select a minimum of three credits from the following:		3
ARTH 335	Pre-Columbian Art and Architecture	
ARTH 338	Colonial Art and Architecture of Latin America	
ARTH 339	Modern and Contemporary Art and Architecture of Latin America	
ARTH 450	Art and Architecture of Mesoamerica	
FLET/INTL 391	Topics in Foreign Literature in English Translation <sup>1</sup>	
INTL 491	Topics in International Studies <sup>1</sup>	
POLI/INTL 353	Latin American Governments and Politics	
RELS 490	Senior Capstone Seminar	
RELS 491	Topics in Religious Studies <sup>1</sup>	
WRLD 391	Topics in World Languages and Cultures <sup>1</sup>	
WRLD 491	Topics in World Languages and Cultures <sup>1</sup>	
Select an additional six credits from the courses listed above		6
Total Hours		18

<sup>1</sup> When appropriate: Always check first with the SWS Advising Office before enrolling in these courses.

## Mediterranean studies, minor in

The Mediterranean studies minor consists of 18 credits. A minimum of 12 credits must be earned at the upper (300- or 400-) level. No more than six credits can be earned within the same discipline.

Students must complete a minimum of three credits of geographically pertinent foreign language course work (Arabic, French, Hebrew, Italian, Portuguese or Spanish) at the advanced level (300 or above). If VCU does not offer courses in a specific Mediterranean language (e.g. Albanian, Catalan, Croatian, Turkish, Modern Greek, etc.), the School of World Studies Advising Office will assist students in identifying appropriate language study options at other U.S. institutions or abroad.

**Note:** Language Placement Test results cannot substitute for completion of course work.

### Required Courses

WRLD 310	Mediterranean Cultural Geography	3
WRLD 311	Civilization of the Mediterranean	3
Select one of the following:		3
RELS 310	Mediterranean Religions	
RELS/INTL 312	Religions of the World	
WRLD/INTL 203	Cultural Texts and Contexts: ____ <sup>1</sup>	
Select three of the following:		9
ANTH/INTL 455	Anthropology of Development and Globalization	
ARTH 103	Survey of Art I	
or ARTH 104	Survey of Art II	
EUCU 311	Classical Mythology	
FLET/INTL 391	Topics in Foreign Literature in English Translation <sup>1</sup>	
FREN/INTL 450	Francophone Literatures and Cultures	
GSWS 391	Topics in Gender, Sexuality and Women's Studies <sup>1</sup>	
HIST 310	The Early Middle Ages	
HIST 311	High and Later Middle Ages	
HIST 317	History of France I	
HIST 318	History of France II	
HIST 329	History of Spain and Portugal	
HIST 330/GSWS 339	History of Women in Europe I	
HIST 331	History of Women in Europe II	
HIST 340	The Middle East, 600-1600	
HIST 342	Early Modern Ottoman Empire	
INTL 491	Topics in International Studies <sup>1</sup>	
ITAL 320	Italian Cinema: ____	
ITAL 330	Themes in Italian Literature: ____	
ITAL 391	Topics in Italian <sup>1</sup>	
PHIL 103	Ancient Greek and Medieval Western Philosophy	
RELS 315/HIST 301	The Ancient Near East	
SOCY/GSWS 334	Sociology of Women	
SPAN 420	Civilization of Spain II	



URSP 350/INTL 345/FRLG 345	Great Cities of the World <sup>1</sup>	
WRLD 391	Topics in World Languages and Cultures <sup>1</sup>	
WRLD 491	Topics in World Languages and Cultures <sup>1</sup>	
Total Hours		18

<sup>1</sup> When appropriate: If students wish to fulfill an elective with a course not listed above, the course must be discussed and approved by the School of World Studies Advising Office.

Students majoring in art history may apply three credits of an art history course relevant to Mediterranean studies toward the minor. The art history course must be approved through the SWS Advising Office.

## Religious studies, minor in

The minor in religious studies consists of 18 credits in religious studies. At least nine of the credits must be taken in upper-level courses.

## Russian studies, minor in

A minor in Russian studies requires at least 18 credits, none of which may be earned at the 100 level.

**Note:** Language Placement Test results cannot substitute for completion of course work.

RUSS 201	Intermediate Russian	3
RUSS 202	Intermediate Russian Readings	3
or RUSS 205	Intermediate Russian Conversation	
Select at least three credits at the 300 level or above from courses taught in Russian		3
Select nine credits from courses taught either in Russian or in English that relate to Russian history, politics, society or culture, from the following:		9
ENGL 391	Topics in Literature <sup>1</sup>	
FLET/INTL 391	Topics in Foreign Literature in English Translation <sup>1</sup>	
HIST 327	History of Russia I	
HIST 328	History of Russia II	
HIST 389	History in Film: ____ <sup>1</sup>	
HIST 391	Topics in History <sup>1</sup>	
INTL 490	Seminar in International Issues <sup>1</sup>	
INTL 491	Topics in International Studies <sup>1</sup>	
POLI/INTL 354	Russian and Post-Soviet Politics	
RUSS 311	Conversation and Media (in Russian)	
RUSS 330	Literature and Culture: ____ (in Russian)	
RUSS 422	Russian Film (in Russian)	
RUSS 491	Topics in Russian (in Russian)	
URSP/INTL 334	Regional Geography of ____ <sup>1</sup>	
URSP 350/FRLG 345/INTL 345	Great Cities of the World <sup>1</sup>	
WRLD/INTL 203	Cultural Texts and Contexts: ____ <sup>1</sup>	
WRLD 220	Human Rights and Literature <sup>1</sup>	
WRLD 391	Topics in World Languages and Cultures <sup>1</sup>	

WRLD 491	Topics in World Languages and Cultures <sup>1</sup>	
Total Hours		18

<sup>1</sup> When appropriate: Always check first with the SWS Advising Office before enrolling in these courses.

Courses taken through an approved study abroad program in an appropriate location (must be preapproved through the SWS Advising Office).

## Spanish, minor in

A minor in Spanish requires at least 18 credits in the chosen language, none of which may be earned at the 100 level.

SPAN 201	Intermediate Spanish	3
SPAN 202	Intermediate Spanish Readings	3
or SPAN 205	Intermediate Spanish Conversation	
Select at least 12 credits at the 300 level or above with only one of the following three advanced conversation courses: <sup>1</sup>		12
SPAN 305	Spanish Conversation	
SPAN 307	Spanish Conversation and Film	
SPAN 311	Spanish Through the Media	
Total Hours		18

<sup>1</sup> Note that these courses cannot be taken by native speakers of Spanish, non-natives raised in a Spanish-speaking country or near-native speakers. However, under the consideration of the Spanish coordinator and class instructor, SPAN 307 and SPAN 311 may be taken by Spanish-speaking students raised in the U.S. who haven't had enough practice of academic discourse in Spanish.

**Note:** Language Placement Test results cannot substitute for completion of course work. Foreign language minors must take at least two upper-level courses at VCU in the chosen language area.

## World cinema, minor in

The world cinema minor consists of 18 credits. A minimum of 12 credits must be earned at the upper (300- or 400-) level.

**Note:** Language Placement Test results cannot substitute for completion of course work.

WRLD 230	Introduction to World Cinema	3
WRLD 330	Introduction to Film Studies	3
WRLD 422	National Cinema	3
WRLD 430	Film and the City	3
Select one of the following:		3
ARTH 270	History of the Motion Picture I	
ARTH 271	History of the Motion Picture II	
ENGL 385	Fiction into Film	
Select a minimum of three credits of relevant foreign language course work at the advanced level (300 or above)		3
Total Hours		18

# SCHOOL OF ALLIED HEALTH PROFESSIONS

The School of Allied Health Professions was established on Jan. 1, 1969, to provide an administrative structure for existing educational programs in allied health disciplines and to direct the development of new programs in response to the growing need for allied health manpower. At the outset, the school incorporated existing educational programs for hospital administration, medical technology, physical therapy and radiologic technology and X-ray technicians.

In the years since its establishment, the school has grown significantly — developing unique, cutting-edge curricula and degree offerings in both traditional and nontraditional formats — to meet the increasing demand for allied health teachers, researchers and practitioners. Considered a leader in distance education, VCU's School of Allied Health Professions offers the only interdisciplinary, Internet-based doctoral program in allied health in the country: the Ph.D. in Health Related Sciences. The school currently incorporates nine departments and offers programs at the baccalaureate, certificate, master's and doctoral levels.

## Administration

1200 East Broad Street  
P.O. Box 980233  
Richmond, Virginia 23298-0233  
(804) 828-7247  
Fax: (804) 828-8656  
sahp.vcu.edu (<http://www.sahp.vcu.edu>)

**Cecil B. Drain, Ph.D., CRNA, FAAN, FASAHP**  
Dean

**Alexander F. Tartaglia, D.Min.**  
Senior associate dean

**Angela Duncan, Ph.D.**  
Assistant dean for student affairs and community engagement

**Brian T. McMahon, Ph.D., CRC, NCC, CCM**  
Associate dean for research

**Debra A. Ropelewski**  
Associate dean for fiscal affairs

**Jessica F. Gurganus**  
Assistant dean for development

**Jeffrey R. Lodge**  
Director of information technology

**Monica White**  
Coordinator of student affairs and Ph.D. program

## Philosophy

The faculty of the school is committed to offering, through the establishment and maintenance of rigorous standards of excellence, educational programs that will prepare students for professional careers in the allied health disciplines. Development of professional attitudes, emotional maturity and ethical behavior of students is a vital component of the educational process. It is essential that students gain a deep respect for the dignity of human beings and the inherent rights of

patients and others who receive services. The programs are designed to include not only the development of skills to assure excellence in quality of health care, but also factual knowledge and experiences that will provide the basis for continuing intellectual and professional growth.

Community services of the school and faculty include continuing education, consultative resources and participation in all pertinent areas of health care. An integral part of these efforts is to stimulate and sponsor research activities in the allied health disciplines represented within the school and to encourage interdisciplinary research.

## Accreditation

The School of Allied Health Professions is an institutional member of the American Society of Allied Health Professions and the Virginia Association of Allied Health Professions. All of its programs are approved or accredited by the appropriate national professional or educational organizations.

### Clinical laboratory sciences (bachelor's degree)

National Accrediting Agency for Clinical Laboratory Sciences  
5600 N. River Road, Suite 720, Rosemont, IL 60018-5519; (847) 939-3597, (773) 714-8880 or (773) 714-8886 (fax); [infor@naacsl.org](mailto:infor@naacsl.org); [www.naacsl.org](http://www.naacsl.org) (<http://www.naacsl.org>). Upon graduation the student is eligible to take the national examination for MLS given by the Board of Certification of the American Society for Clinical Pathology.

### Health administration (master's and executive master's degrees)

Commission on Accreditation of Healthcare Management Education

### Nuclear medicine technology (bachelor's degree in Clinical Radiation Sciences)

Joint Review Committee on Educational Programs in Nuclear Medicine Technology

### Nurse anesthesia (master's, doctorate)

Council on Accreditation of Nurse Anesthesia Educational Programs (COA, 222 South Prospect Avenue, Park Ridge, Illinois, 847-692-7050).

The COA is recognized by the U.S. Department of Education and the Council on Higher Education Accreditation to accredit programs of nurse anesthesia at the master's, post-master's and doctoral levels.

Graduates of the master's program are eligible to take the examination for certification conducted by the Council on Certification of Nurse Anesthetists.

### Occupational therapy (master's degree)

Accreditation Council for Occupational Therapy Education

### Patient counseling (certificate)

Association for Clinical Pastoral Education

### Physical therapy (D.P.T.)

Commission on Accreditation in Physical Therapy Education, American Physical Therapy Association

## Radiation therapy technology (bachelor's degree in Clinical Radiation Sciences)

Joint Review Committee on Education in Radiologic Technology

## Radiography (bachelor's degree in Clinical Radiation Sciences)

Joint Review Committee on Education in Radiologic Technology

## Rehabilitation counseling (master's degree)

Council on Rehabilitation Education

## Programs

Both entry- and advanced-level undergraduate, graduate, professional and certificate programs are offered by the School of Allied Health Professions. University and accreditation requirements for the individual programs guide the establishment of general admission prerequisites and course and degree requirements. Regulations and procedures for each program are outlined in these bulletins and are intended to ensure the selection of applicants whose motivation, ability, character and health status qualify them to pursue their program of study successfully.

Programs currently offered by this school and the degrees conferred on their graduates are:

### School of Allied Health Professions – Dean's Office

- Ph.D. in Health Related Sciences

### Department of Clinical Laboratory Sciences

- Bachelor of Science
- Master of Science

### Department of Gerontology

- Post-baccalaureate graduate certificate in aging studies
- Post-baccalaureate graduate certificate in aging studies and Master of Social Work (offered jointly with the VCU School of Social Work)
- Master of Science

### Department of Health Administration

- Master of Health Administration
- Master of Health Administration and Doctor of Medicine (offered jointly with the VCU School of Medicine)
- Master of Health Administration and Juris Doctor (offered jointly by the T. C. Williams School of Law at the University of Richmond and the Washington and Lee University School of Law)
- Master of Health Administration and Master of Science in Information Systems (offered jointly with the VCU School of Business)
- Master of Science in Health Administration (Professional M.S.H.A. Program – Online)
- Ph.D. in Health Services Organization and Research

### Department of Nurse Anesthesia

- Doctor of Nurse Anesthesia Practice
  - Entry-to-practice
  - Post-professional

- Master of Science in Nurse Anesthesia

### Department of Occupational Therapy

- Master of Science in Occupational Therapy
- Master of Science in Occupational Therapy and post-baccalaureate graduate certificate in aging studies
- Occupational Therapy Doctorate
  - Entry-to-practice
  - Post-professional

### Department of Patient Counseling

- Post-baccalaureate graduate certificate in patient counseling
- Master of Science
- Master of Science and Master of Divinity (offered jointly by the School of Theology at Virginia Union University and the Baptist Theological Seminary)

### Department of Physical Therapy

- Doctor of Physical Therapy
- Ph.D. in Rehabilitation and Movement Science

### Department of Radiation Sciences

- Bachelor of Science

### Department of Rehabilitation Counseling

- Master of Science
- Master of Science in Rehabilitation Counseling and post-baccalaureate graduate certificate in aging studies
- Post-master's certificate in professional counseling

## Licensure/certification

Graduates of most of the programs offered in the School of Allied Health Professions are required or eligible to take national and/or state certification or licensure examinations. Requirements of licensing and certifying agencies vary. Some licensure and certification agencies consider individuals convicted of a felony ineligible for licensure or certification. For information, prospective students should contact the licensure or certification agency for the specific allied health discipline.

## Attendance regulations

The faculty considers attendance at lectures, laboratories and other functions a requisite to the successful acquisition of the knowledge and skills required of the professional. Hence, the faculty cannot condone absence without good reason from any regularly scheduled educational experience. At the beginning of each course, instructors relate to their classes the policy of the department concerning the attendance regulations for that semester. The nature of make-up work in the event of absence will be the prerogative of the instructor.

## Student performance and behavior

The goals and objectives of the School of Allied Health Professions and its component departments and programs relate to the education of persons preparing for professional careers in the allied health disciplines. An integral requisite of students and practitioners is an undeviating acceptance of a professional attitude and pride that will motivate them

to adhere to a code of professional ethics and to develop fully their competencies for practice.

The suitability of student performance and behavior relating to these professions and to the consumers of health care is a paramount concern of the administration and faculty of this school. To assure a quality of educational and clinical preparation for its graduates, the following statement is promulgated:

- If, in the judgment of the faculty and administration of the School of Allied Health Professions, a student is not considered suitable for emotional, professional or related reasons, the student's academic status may be appropriately altered.

If any questions arise regarding the standards of performance or behavior, it is the responsibility of students to apprise themselves of acceptable character and conduct requirements prior to matriculation in the designated department or program.

## Standards of professional behavior

These standards describe behaviors expected from the faculty and students of the School of Allied Health Professions. They are in addition to those standards of behavior and ethical conduct required by the school's departments and professional organizations. They are supplemental to the university statement regarding conduct in the classroom.

- Recognize one's position as a role model of your profession for other members of the health care team.
- Carry out academic, clinical and research responsibilities in a conscientious manner, making every effort to exceed expectations and demonstrating a commitment to lifelong learning.
- Treat patients, faculty and students with respect, demonstrating sensitivity to diversity regarding ethnicity, culture, age, gender, disability, social and economic status, sexual orientation, etc., without discrimination, bias or harassment.
- Maintain patient/client confidentiality.
- Respect the privacy of all members of the campus community and avoid promoting gossip and rumor.
- Interact with all members of the health care team in a collaborative and supportive fashion, with respect and recognition of the roles played by each individual.
- Provide help or seek assistance for any member of the health care team who is recognized as impaired in his/her ability to perform his/her professional obligations.
- Be mindful of the limits of one's knowledge and abilities and seek help from others whenever appropriate.
- Abide by accepted ethical standards in the scholarship, research and practice of patient/client care.
- Abide by the guidelines of the VCU Honor System.

## Financial aid

Financial aid is available for all students meeting the criteria for financial assistance. For details of the programs available contact the Financial Aid Office, P.O. Box 980244, Richmond, VA 23298-0244 or telephone (804) 828-9800.

The school and departments also offer financial awards, honors and scholarships. Details may be found on the school's and individual departments' websites at [sahp.vcu.edu](http://www.sahp.vcu.edu) (<http://www.sahp.vcu.edu>).

## Undergraduate information

### Preparatory study for health sciences

University Academic Advising administers programs in preparation for admission into health sciences programs. For detailed information on the pre-health major in clinical laboratory sciences (p. 36), see the UAA section of this bulletin. The section also includes detailed information on the pre-health major in radiation sciences (p. 37).

## Department of Clinical Laboratory Sciences

**Teresa S. Nadder, Ph.D., MLS(ASCP)<sup>CM</sup>**

Associate professor and chair

**Emily M. Hill, MT(ASCP)**

Assistant professor and assistant chair

[sahp.vcu.edu/departments/cls](http://sahp.vcu.edu/departments/cls) (<http://sahp.vcu.edu/departments/cls>)

The Department of Clinical Laboratory Sciences supports the philosophy and mission of the university and the School of Allied Health Professions, and provides an environment that nurtures excellence in education, research and service. The programs offered by the department are dedicated to enhancing and promoting clinical laboratory science. The department fosters fair and equitable educational experiences for students of all ages and diverse backgrounds. Strong affiliations with clinical educators and the integration of innovative technology in the academic setting facilitate both the education and research goals of the department.

The department provides students with superior studies in clinical laboratory science, including both theoretical and applied clinical education, and develops problem-solving expertise, leadership capabilities and communication skills. By providing advanced theoretical and technical education, the graduate program serves to maintain and update the competency of laboratory professionals and to prepare students to assume roles as laboratory supervisors, university educators and researchers. A mature, responsible approach to the acquisition of knowledge is cultivated in order to establish continuing intellectual growth and an enthusiasm for the profession.

The department meets the growing health care needs of the community by providing highly competent and professional clinical laboratory scientists who will be able to function effectively upon entrance into the field and be prepared to explore future scientific and technological advances in laboratory science. And the department promotes continued professional development and personal growth for the faculty and staff to fulfill and balance the individual's abilities and aspirations with the departmental, school and institutional mission and needs. Members of the department conduct themselves in a forthright, ethical manner and practice the highest standard of quality performance.

The objectives of the Department of Clinical Laboratory Sciences are:

- To provide an educational program that prepares students to accurately perform and evaluate analytical tests on body fluids, cells and products.
- To foster the development of professional conduct, interpersonal communication skills and ethical principles.
- To develop and promote strategies for lifelong learning and to encourage continued professional growth through research,

continued education and active participation in professional societies.

## History

Clinical laboratory scientists have been trained on the MCV Campus since 1927. However, the Department (formerly school) of Medical Technology was not formally established until 1952, at which time the curriculum included six months of didactic experience with lectures and laboratory sessions held in the department, followed by a six-month rotation through the clinical laboratories. The school offered a certificate and/or bachelor's degree program; the certificate program was discontinued during the 1961-62 school year.

In 1974 the curriculum was expanded to the current two-plus-two year program in which students complete 60 semester hours of prerequisites followed by two years of professional course work. The graduate program in clinical laboratory sciences was started in 1967 to provide advanced education for certified medical technologists/clinical laboratory scientists. In 1985 the program was modified to allow candidates holding a degree in another area of science to obtain graduate education in clinical laboratory sciences.

In 1994, the department name was changed to the Department of Clinical Laboratory Sciences. In 2003, an accelerated track was initiated to integrate the undergraduate and graduate programs, which requires completion of two years of prerequisites and three years of full-time professional course work, and leads to the simultaneous awarding of both the bachelor's and master's degrees.

## Facilities

The Department of Clinical Laboratory Sciences is located in the Randolph Minor Hall on the MCV Campus. All faculty and clerical offices are located in this facility, as well as student classrooms, general teaching laboratory, computer facilities and a student lounge/reading room.

- Clinical Laboratory Sciences, Bachelor of Science (B.S.) (p. 252)

## Clinical Laboratory Sciences, Bachelor of Science (B.S.)

Clinical laboratory scientists receive training in the following areas: clinical chemistry, the study of chemical reactions that occur in normal and diseased processes; hematology, the study of the cellular elements of the blood and blood-forming tissues and hemostatic mechanism; urine and body fluids analysis, the study of principles and practices of urinalysis, kidney function, and analyses of cerebrospinal fluid and other body fluids; microbiology, the study of microbiological aspects of infectious disease and the isolation and identification of pathogenic bacteria; immunohematology, the application of theory and principles of blood banking, cell typing, compatibility testing and antibody identification; and immunology, the study of the immune system and the serological and molecular techniques used for diagnosing infectious disease. With the rapid advancement of knowledge in the field of laboratory medicine, there is a growing need for highly skilled and knowledgeable clinical laboratory scientists. Employment is found in hospitals; physicians' offices; research facilities; molecular diagnostics, biotechnology and public health laboratories; industrial quality control; veterinary clinics; and sales and service of health care equipment. In addition to the technical arena, opportunities as managers or consultants exist for graduates of this program.

Upon graduation the student is eligible to take the national examination for medical laboratory science given by the Board of Certification of the American Society for Clinical Pathology.

## Mission statement

The mission of the undergraduate program is to serve the health care needs of the community by providing highly competent and professional clinical laboratory scientists who will be able to function effectively upon entrance into the field and be prepared to explore future scientific and technological advances in laboratory science.

## Learning outcomes

Upon completing this program, students will demonstrate knowledge and proficiency of the following:

- Basic underlying scientific concepts and proficiency in performing the full range of laboratory tests in the areas of hematology, clinical chemistry, immunohematology (blood banking), microbiology, urine and body fluids, serology/immunology and molecular diagnostics.
- Appropriate professional conduct and leadership characteristics to include effective communication skills, ethical conduct and problem-solving abilities.

## Admission requirements for applicants with an associate degree in laboratory science

Certified MLTs (CLTs) qualify for special admission with less than 60 hours of credit. An MLT (CLT) applicant must have a minimum of 44 non-MLT semester hours of transferable credit for admission as a full-time student (38 hours for part-time admission). The transfer hours must include: 8 hours of biology, 8 hours of chemistry, 3 hours of mathematics and 6 hours of English composition. MLTs admitted under special status are required to complete the science, humanities and social sciences requirements for regular admission before they qualify for graduation.

CLS credit may be granted for upper-level course requirements through challenge examinations or exemptions based on documented competencies, depending upon a student's past academic performance in previous course work and clinical experience.

MLTs (CLTs) who meet the exemption eligibility requirements for the junior-level laboratory portions of the curriculum may take the CLS course work online.

## Academic regulations

The minimum passing grade for all professional courses leading to the Bachelor of Science degree is D. All courses must be completed with a passing grade, with no more than one D, for the student to be eligible for promotion or graduation. Satisfactory completion of the previous semester's course work is a prerequisite to the next semester.

Promotion/graduation is based on recommendations of the faculty. The student is expected to do all of the following:

- Maintain a minimum GPA of 2.0 at VCU
- Maintain a minimum GPA of 2.0 in CLS course work
- Obtain a passing grade in all CLS courses, with no more than one course grade of D in CLS course work
- Complete the clinical education requirements to the satisfaction of the clinical and academic faculty



- Exhibit the attitudes and skills deemed necessary to function as a professional clinical laboratory scientist
- Pay all fees

Detailed grading policies including the mechanism for grade appeals are given to each entering student during orientation.

## Special requirements

All students will have fulfilled core and general education requirements and a minimum of 60 transferable semester credits at an accredited college or university including:

- Biology: 12 hours to include general biology; human physiology and anatomy recommended
- Chemistry: 12 hours to include eight hours of general chemistry; remaining four hours can be (in order of preference) quantitative analysis, organic chemistry or qualitative analysis
- English: six to nine hours of composition (VCU: UNIV 111-UNIV 112 and UNIV 200 or their equivalents)
- Mathematics: three hours; additional mathematics or physics recommended
- Humanities/Arts: three hours (selected from courses in history, philosophy, political science, religion, foreign languages, literature, art history or art appreciation)
- Social Sciences: three hours (selected from courses in anthropology, economics, geography, psychology, or sociology)

Applicants should possess the following essential technical abilities and skills for admission consideration:

- Manual dexterity: ability to use hand(s) or prosthetic devices with coordination
- Fine motor: ability to manipulate small objects with fingertips or adaptive devices
- Mobility: ability to maneuver in the laboratory and around instruments and in patient-care settings
- Vision: ability to distinguish red, yellow and blue colors; to distinguish clear from cloudy; and to distinguish objects through a microscope
- Hearing: ability to hear with assistive devices (i.e., phone receivers, hearing aid, etc.)
- Speech: ability to verbally communicate in English
- Writing: ability to communicate effectively in written form in English
- Reading: ability to read, understand and follow directions printed in English
- Emotional and physical stability: ability to work accurately and safely under stress, adapt to changing environments and prioritize tasks
- Personal attributes: must demonstrate integrity, responsibility, tolerance and respect

## Degree requirements for Clinical Laboratory Sciences, Bachelor of Science (B.S.)

### Minimum credits for admission into program 60 credits

#### Major requirements

CLLS 301 & CLLS 302	Hematology and Hematology	3-11.5
CLLS 304	Urine and Body Fluid Analysis	1-2
CLLS 306	Immunohematology	2.5-4.5

CLLS 307	Introduction to Pathogenic Microbiology	1-3
CLLS 308	Pathogenic Bacteriology	3-5
CLLS 310	Clinical Immunology	3-4.5
CLLS 311	Clinical Chemistry and Instrumentation I	3-5
CLLS 312	Clinical Chemistry and Instrumentation II	4-5
CLLS 337	Clinical Education	1
CLLS 407	Interpretive Immunohematology	2-2.5
CLLS 408	Advanced Microbiology	2
CLLS 409	Interpretive Hematology	2
CLLS 410	Advanced Clinical Chemistry and Instrumentation	2
CLLS 411	Principles of Education/Management	2.5-3.5
CLLS 412	Senior Seminar	1
CLLS 483	Biochemistry Practicum	1-4.5
CLLS 485	Hematology Practicum	1-4.5
CLLS 493	Clinical Microbiology Practicum	1-4.5
CLLS 494	Miscellaneous Clinical Practicum	1-4.5
CLLS 496	Blood Bank Practicum	1-4.5

### Elective study

CLLS 438	Research Paper	1
----------	----------------	---

### Total minimum requirement 125 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Minimum credits for admission into program 60 credits

##### Junior year

Fall semester		Hours
CLLS 301	Hematology	2-7.5
CLLS 304	Urine and Body Fluid Analysis	1-2
CLLS 307	Introduction to Pathogenic Microbiology	1-3
CLLS 310	Clinical Immunology	3-4.5
CLLS 311	Clinical Chemistry and Instrumentation I	3-5
Term Hours:		10-22

##### Spring semester

CLLS 302	Hematology	1-4
CLLS 306	Immunohematology	2.5-4.5
CLLS 308	Pathogenic Bacteriology	3-5
CLLS 312	Clinical Chemistry and Instrumentation II	4-5
Term Hours:		10.5-18.5

##### Summer semester

CLLS 337	Clinical Education	1
Term Hours:		1

##### Senior year

Fall semester		
CLLS 483	Biochemistry Practicum	1-4.5
CLLS 485	Hematology Practicum	1-4.5
CLLS 493	Clinical Microbiology Practicum	1-4.5

CLLS 494	Miscellaneous Clinical Practicum	1-4.5
CLLS 496	Blood Bank Practicum	1-4.5
Term Hours:		5-22.5
<b>Spring semester</b>		
CLLS 407	Interpretive Immunohematology	2-2.5
CLLS 408	Advanced Microbiology	2
CLLS 409	Interpretive Hematology	2
CLLS 410	Advanced Clinical Chemistry and Instrumentation	2
CLLS 411	Principles of Education/Management	2.5-3.5
CLLS 412	Senior Seminar	1
CLLS 438	Research Paper (elective study)	1
Term Hours:		12.5-14
Total Hours:		39-78

## Department of Radiation Sciences

**Jeffrey S. Legg, Ph.D., RT(R)(CT)(QM)**

Associate professor and chair

[sahp.vcu.edu/departments/radsci](http://sahp.vcu.edu/departments/radsci) (<http://sahp.vcu.edu/departments/radsci>)

The Department of Radiation Sciences is an integral part of the School of Allied Health Professions and shares its values. The department serves as a national leader in the education of students in the radiation sciences and provides learning opportunities that are innovative and educationally sound. Strong linkages with clinical affiliates and their staffs are vital to the department's success. Faculty and staff work in a cooperative spirit in an environment conducive to inquisitiveness and independent learning to help a diverse student body develop to its fullest potential. The faculty is committed to the concept of lifelong learning and promotes standards of clinical practice that will serve students throughout their professional careers. Faculty members serve as resources for professionals in practice and contribute to an expanded knowledge base in the field of clinical radiation sciences.

The mission of the Department of Radiation Sciences is to enable a diverse student body to develop its fullest potential and to graduate baccalaureate-level radiologic health professionals who demonstrate outstanding technical, communication and critical-thinking skills.

### Department of Radiation Sciences' goals

- For entry-level and second modality programs, students will be clinically competent.
  - Students will attain clinical competence.
  - Graduates will demonstrate clinical competence while employed in the radiation sciences.
- Students will communicate effectively.
  - Students will demonstrate effective communication during their clinical experience.
  - Students will demonstrate effective communication through the research project.
  - Graduates will demonstrate effective communication while employed in the radiation sciences.
- Students will demonstrate critical-thinking skills.
  - Students will demonstrate critical-thinking skills during their clinical experience.

- Students will demonstrate critical-thinking skills in developing their research project.
- Students will model professionalism.
    - Students will demonstrate professionalism during their clinical experience.
    - Graduates will demonstrate professionalism while employed in the radiation sciences.
  - The department will assure program effectiveness.

## History

Radiologic technology education began at the Medical College of Virginia in the 1930s with a one-year training program in radiography. This program has undergone a number of changes through the years to evolve into the current baccalaureate educational program.

A concentration in nuclear medicine technology was added in 1984 and in radiation therapy in 1992. Degree-completion programs have been added to provide an opportunity for certified technologists and therapists to complete requirements for the baccalaureate degree.

## Facilities

The educational facilities for the Department of Radiation Sciences are located at 701 W. Grace St., Suite 2100. These facilities include energized laboratories in radiography, nuclear medicine, radiation therapy and mammography. The radiography laboratory includes a digital imaging system. In addition, the radiation therapy laboratory has a 3-D treatment planning system.

During the various phases of the curriculum, students will be assigned to one or more of the following affiliate institutions: VCU Health System's MCV Hospitals, McGuire Veterans Affairs Medical Center, Southside Regional Medical Center, Henrico Doctors' Hospitals and a variety of smaller clinics and facilities.

- Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in:
  - Nuclear medicine technology (p. 254)
  - Nuclear medicine technology (degree completion) (p. 257)
  - Nuclear medicine technology (second modality) (p. 258)
  - Radiation therapy (p. 260)
  - Radiation therapy (degree completion) (p. 262)
  - Radiation therapy (second modality) (p. 263)
  - Radiography (p. 265)
  - Radiography (degree completion) (p. 267)
  - Radiologist assistant (second modality) (p. 268)

## Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology

The department offers a Bachelor of Science in Clinical Radiation Sciences with the following areas of concentration: radiography, nuclear

medicine technology and radiation therapy. Upon meeting prerequisites and gaining admission to the program, students complete a three-year, full-time program that includes general education and professional course work. Graduates of each of the programs are eligible for national certification examinations in their respective area of concentration.

Upon completion of one of the concentrations, the graduate is eligible for the relevant national certification examination administered by the American Registry of Radiologic Technologists. Graduates of the nuclear medicine technology program also are eligible for the certification examination administered by the Nuclear Medicine Technology Certification Board.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Attain clinical competence in entry level nuclear medicine procedures
- Communicate effectively with patients, staff and physicians in the Nuclear Medicine department
- Demonstrate effective written communication
- Demonstrate critical thinking skills during their nuclear medicine clinical experience
- Demonstrate critical thinking skills in developing a research project
- Demonstrate professionalism during their nuclear medicine clinical experience

## Special requirements

### Entry-level program prerequisites

To be eligible for admission into any of the entry-level concentrations students must have completed the following prerequisites:

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
MATH 141	Algebra with Applications	3
BIOL 205	Basic Human Anatomy	4
PHIS 206	Human Physiology	4
& PHIZ 206	and Human Physiology Laboratory	
PHYS 101	Foundations of Physics	4
& PHYZ 101	and Foundations of Physics Laboratory	
PSYC 101	Introduction to Psychology	4
Humanities/fine arts elective <sup>1</sup>		

<sup>1</sup> VCU students – Select a course from the approved University Core humanities/fine arts list, including history, religion, literature, philosophy, foreign language, speech.

## English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in the following CLRS courses:

CLRS 208	Foundations of Patient Care	4
CLRS 232	Radiation Safety	2
CLRS 303	Orientation to Nuclear Medicine	2
CLRS 317	Nuclear Medicine Procedures I	3

CLRS 318	Nuclear Medicine Procedures II	2
CLRS 319	Nuclear Medicine Procedures III	3
CLRS 321	Nuclear Medicine Physics and Instrumentation I	2
CLRS 322	Nuclear Medicine Physics and Instrumentation II	3
CLRS 341	Radiation Physics	2
CLRS 393	Clinical Education I	2-5
CLRS 394	Clinical Education II	2-4
CLRS 395	Clinical Education III	2-6
CLRS 417	Nuclear Medicine Procedures IV	3
CLRS 430	Radiobiology	2
CLRS 453	Quality Management in Nuclear Medicine	2
CLRS 461	Radiopharmaceutical: Preparation and Quality Control	2
CLRS 493	Clinical Education IV	1-5
CLRS 494	Clinical Education V	1-5
CLRS 321	Nuclear Medicine Physics and Instrumentation Laboratory I	1
CLRS 322	Nuclear Medicine Physics and Instrumentation Laboratory II	1

## Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology

### Admission requirements for program

Pre-radiation sciences advising track 27-32 credits

### Collateral requirements

CHEM 101	General Chemistry	4
& CHEZ 101	and General Chemistry Laboratory I	
CHEM 102	General Chemistry	4
& CHEZ 102	and General Chemistry Laboratory II	
HCMG 300	Health Care Organization and Services	3
HPEX 250	Medical Terminology	1
STAT 210	Basic Practice of Statistics	3
Total Hours		15

### Major requirements

CLRS 203	Pathophysiology I	3
CLRS 204	Pathophysiology I and II	3
CLRS 205	Exploring Radiation Sciences	1
CLRS 206	Cross-sectional Anatomy	2
CLRS 208	Foundations of Patient Care	4
CLRS 232	Radiation Safety	2
CLRS 303	Orientation to Nuclear Medicine	2
CLRS 317	Nuclear Medicine Procedures I	3
CLRS 318	Nuclear Medicine Procedures II	2
CLRS 319	Nuclear Medicine Procedures III	3

CLRS 321 & CLRZ 321	Nuclear Medicine Physics and Instrumentation I and Nuclear Medicine Physics and Instrumentation Laboratory I	3
CLRS 322 & CLRZ 322	Nuclear Medicine Physics and Instrumentation II and Nuclear Medicine Physics and Instrumentation Laboratory II	4
CLRS 341	Radiation Physics	2
CLRS 390	Research Methods in the Radiation Sciences (writing and academic research)	2
CLRS 393	Clinical Education I <sup>2</sup>	2
CLRS 394	Clinical Education II <sup>2</sup>	2
CLRS 395	Clinical Education III <sup>2</sup>	3
CLRS 398	Introduction to Research (writing and academic research)	1
CLRS 407	Introduction to PET/CT	2
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 417	Nuclear Medicine Procedures IV	3
CLRS 430	Radiobiology	2
CLRS 453	Quality Management in Nuclear Medicine	2
CLRS 461 & CLRZ 461	Radiopharmaceutical: Preparation and Quality Control and Radiopharmacy Laboratory	3
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV <sup>2</sup>	3
CLRS 494	Clinical Education V <sup>2</sup>	3
CLRS 498	Senior Project	2
Total Hours		69

<sup>2</sup> These courses have variable credits. The credits indicated are the most commonly used in the entry-level curriculum.

## Open electives

Select nine open elective credits

9

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Admission requirements for program 27-32 credits

#### Sophomore year

Fall semester		Hours
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CLRS 203	Pathophysiology I	3
CLRS 205	Exploring Radiation Sciences	1
CLRS 208	Foundations of Patient Care	4
HCMG 300	Health Care Organization and Services	3
HPEX 250	Medical Terminology	1
Term Hours:		16

#### Spring semester

CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CLRS 204	Pathophysiology I and II	3
CLRS 232	Radiation Safety	2
STAT 210	Basic Practice of Statistics	3
Elective		3
Term Hours:		15

#### Summer semester

CLRS 303	Orientation to Nuclear Medicine	2
Term Hours:		2

#### Junior year

##### Fall semester

CLRS 206	Cross-sectional Anatomy	2
CLRS 317	Nuclear Medicine Procedures I	3
CLRS 321 & CLRZ 321	Nuclear Medicine Physics and Instrumentation I and Nuclear Medicine Physics and Instrumentation Laboratory I	3
CLRS 341	Radiation Physics	2
CLRS 390	Research Methods in the Radiation Sciences	2
CLRS 393	Clinical Education I	2
Term Hours:		14

##### Spring semester

CLRS 318	Nuclear Medicine Procedures II	2
CLRS 322 & CLRZ 322	Nuclear Medicine Physics and Instrumentation II and Nuclear Medicine Physics and Instrumentation Laboratory II	4
CLRS 394	Clinical Education II	2
CLRS 398	Introduction to Research	1
Electives		5
Term Hours:		14

#### Summer semester

CLRS 319	Nuclear Medicine Procedures III	3
CLRS 395	Clinical Education III	3
Term Hours:		6

#### Senior year

##### Fall semester

CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 417	Nuclear Medicine Procedures IV	3
CLRS 461 & CLRZ 461	Radiopharmaceutical: Preparation and Quality Control and Radiopharmacy Laboratory	3
CLRS 493	Clinical Education IV	3
CLRS 498	Senior Project	2
Term Hours:		13

##### Spring semester

CLRS 407	Introduction to PET/CT	2
CLRS 430	Radiobiology	2
CLRS 453	Quality Management in Nuclear Medicine	2
CLRS 488	Senior Seminar	3

CLRS 494	Clinical Education V	3
Elective		1
Term Hours:		13
Total Hours:		93

## Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology (degree completion)

Full- or part-time opportunities to complete a baccalaureate degree are offered for technologists or therapists certified by the American Registry of Radiologic Technologists and/or the Nuclear Medicine Technology Certification Board. In addition to general education and professional course work, the student selects electives from a wide variety of courses, allowing the design of a program that best meets the goals and interests of the individual.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate effective written communication
- Demonstrate critical-thinking skills in developing a research project

### Special requirements

#### Prerequisites

NMTCB/ARRT Certification (or eligibility<sup>1</sup>) in nuclear medicine

<sup>1</sup> Must be NMTCB/ARRT certified within two semesters of enrollment.

#### English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in CLRS 430.

## Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology (degree completion)

#### Certificate requirement

NMTCB/ARRT nuclear medicine certification 50

#### General education

English composition	3
Humanities	3
Natural/physical science	3
Social science	3
Total Hours	12

#### Collateral requirements

HCMG 300 Health Care Organization and Services 3

STAT 210	Basic Practice of Statistics	3
Total Hours		6

### Major requirements

CLRS 206	Cross-sectional Anatomy	2
CLRS 390	Research Methods in the Radiation Sciences (writing and academic research)	2
CLRS 398	Introduction to Research (writing and academic research)	1
CLRS 407	Introduction to PET/CT	2
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 430	Radiobiology	2
CLRS 498	Senior Project	2
Total Hours		13

### Open electives

Select 8 open elective credits 8

### Open electives (300-level+)

Select 31 open elective credits (330-level+) 31

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Sample outline (full-time option)

Credits toward admission for NMTCB/ARRT nuclear medicine certification 50 credits

#### Year one

Fall semester		Hours
CLRS 390	Research Methods in the Radiation Sciences	2
HCMG 300	Health Care Organization and Services	3
STAT 210	Basic Practice of Statistics	3
UNIV 111	Focused Inquiry I	3
Natural/physical science elective		3
Social science elective		3
Term Hours:		17

#### Spring semester

CLRS 206	Cross-sectional Anatomy	2
CLRS 398	Introduction to Research	1
CLRS 430	Radiobiology	2
Electives		8
Humanities elective		3
Term Hours:		16

#### Summer semester

Electives (300-level +)		7
Term Hours:		7

#### Year two

##### Fall semester



CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 498	Senior Project	2
Electives (300-level +)		12
Term Hours:		16
<b>Spring semester</b>		
CLRS 407	Introduction to PET/CT	2
Electives (300-level +)		12
Term Hours:		14
Total Hours:		70

## Sample outline (part-time option)

### Credits toward admission for NMTCB/ARRT nuclear medicine certification 50 credits

#### Year one

Fall semester		Hours
HCMG 300	Health Care Organization and Services	3
UNIV 111	Focused Inquiry I	3
Natural/physical science elective		3
Term Hours:		9

#### Spring semester

CLRS 206	Cross-sectional Anatomy	2
STAT 210	Basic Practice of Statistics	3
Social science elective		3
Term Hours:		8

#### Summer semester

Elective		3
Term Hours:		3

#### Year two

Fall semester		
CLRS 390	Research Methods in the Radiation Sciences	2
Elective		2
Humanities elective		3
Term Hours:		7

#### Spring semester

CLRS 398	Introduction to Research	1
CLRS 430	Radiobiology	2
Elective		3
Term Hours:		6

#### Summer semester

Electives (300-level +)		4
Term Hours:		4

#### Year three

Fall semester		
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 498	Senior Project	2
Elective (300-level +)		3
Term Hours:		7

#### Spring semester

CLRS 407	Introduction to PET/CT	2
Electives (300-level +)		6
Term Hours:		8
<b>Summer semester</b>		
Electives (300-level +)		6
Term Hours:		6
<b>Year four</b>		
Fall semester		
Electives (300-level +)		6
Term Hours:		6
<b>Spring semester</b>		
Electives (300-level +)		6
Term Hours:		6
Total Hours:		70

## Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology (second modality)

The department offers second modality B.S. degree concentrations for American Registry of Radiologic Technologists-certified radiographers who desire to continue their professional education and concentrate in radiation therapy, nuclear medicine technology or radiologist assistant. Upon meeting admission prerequisites, students complete a five-semester, full-time course of study including didactic, laboratory and clinical education. Graduates are eligible for additional national professional certification examinations.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Attain clinical competence in entry level nuclear medicine procedures
- Communicate effectively with patients, staff and physicians in the Nuclear Medicine department
- Demonstrate effective written communication
- Demonstrate critical thinking skills during their nuclear medicine clinical experience
- Demonstrate critical thinking skills in developing a research project
- Demonstrate professionalism during their nuclear medicine clinical experience

## Special requirements

### Prerequisites for Certificate/AAS degree holders

ARRT certification (or eligibility) in radiography or radiation therapy<sup>1</sup>

Humanities course	3
English composition course	3
Social science course	3
General chemistry (+labs)	8

## Prerequisites for AS/AA/AA&S/BS degree holders

ARRT certification in radiography or radiation therapy (or eligibility) <sup>1</sup>

General Chemistry (+labs)	8
Electives	2

<sup>1</sup> Must be ARRT certified within two semesters of enrollment for eligibility.

## English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in the following CLRS courses:

CLRS 303	Orientation to Nuclear Medicine	2
CLRS 317	Nuclear Medicine Procedures I	3
CLRS 318	Nuclear Medicine Procedures II	2
CLRS 319	Nuclear Medicine Procedures III	3
CLRS 321	Nuclear Medicine Physics and Instrumentation I	2
CLRS 322	Nuclear Medicine Physics and Instrumentation II	3
CLRS 393	Clinical Education I	2-5
CLRS 394	Clinical Education II	2-4
CLRS 395	Clinical Education III	2-6
CLRS 417	Nuclear Medicine Procedures IV	3
CLRS 430	Radiobiology	2
CLRS 453	Quality Management in Nuclear Medicine	2
CLRS 493	Clinical Education IV	1-5
CLRS 494	Clinical Education V	1-5
CLRZ 321	Nuclear Medicine Physics and Instrumentation Laboratory I	1
CLRZ 322	Nuclear Medicine Physics and Instrumentation Laboratory II	1

Must complete statistics or meet requirements for STAT 210 prior to enrollment.

## Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology (second modality)

### Admission requirements (10 <sup>1</sup> or 17 <sup>2</sup> credits)

English composition <sup>2</sup>	3
Humanities <sup>2</sup>	3
Social/behavioral science <sup>2</sup>	3
Chemistry and labs equivalent to the following: <sup>1,2</sup>	8
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II

Electives <sup>1</sup> 2

<sup>1</sup> Certificate/AAS degree holders

<sup>2</sup> AS/AA/AA&S/BS degree holders

## Collateral requirements

ARRT Radiography/Radiation Therapy certification	50	
STAT 210	Basic Practice of Statistics	3
Total Hours		53

## Major requirements

CLRS 206	Cross-sectional Anatomy	2
CLRS 303	Orientation to Nuclear Medicine	2
CLRS 317	Nuclear Medicine Procedures I	3
CLRS 318	Nuclear Medicine Procedures II	2
CLRS 319	Nuclear Medicine Procedures III	3
CLRS 321 & CLRZ 321	Nuclear Medicine Physics and Instrumentation I and Nuclear Medicine Physics and Instrumentation Laboratory I	3
CLRS 322 & CLRZ 322	Nuclear Medicine Physics and Instrumentation II and Nuclear Medicine Physics and Instrumentation Laboratory II	4
CLRS 390	Research Methods in the Radiation Sciences (writing and academic research)	2
CLRS 393	Clinical Education I <sup>2</sup>	2
CLRS 394	Clinical Education II <sup>2</sup>	2
CLRS 395	Clinical Education III <sup>2</sup>	3
CLRS 398	Introduction to Research (writing and academic research)	1
CLRS 407	Introduction to PET/CT	2
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 417	Nuclear Medicine Procedures IV	3
CLRS 430	Radiobiology	2
CLRS 453	Quality Management in Nuclear Medicine	2
CLRS 461 & CLRZ 461	Radiopharmaceutical: Preparation and Quality Control and Radiopharmacy Laboratory	3
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV <sup>2</sup>	3
CLRS 494	Clinical Education V <sup>2</sup>	3
CLRS 498	Senior Project	2
Total Hours		54

<sup>2</sup> These courses have variable credits. The credits indicated are the most commonly used in the entry-level curriculum.

## Restricted electives

Select three restricted electives 3

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Minimum credits from ARRT certification and courses from accredited college or university 60 credits**

**Junior year**

Fall semester			Hours
CLRS 303	Orientation to Nuclear Medicine		2
CLRS 317	Nuclear Medicine Procedures I		3
CLRS 321 & CLRZ 321	Nuclear Medicine Physics and Instrumentation I and Nuclear Medicine Physics and Instrumentation Laboratory I		3
CLRS 390	Research Methods in the Radiation Sciences		2
CLRS 393	Clinical Education I		2
STAT 210	Basic Practice of Statistics		3
Term Hours:			15

**Spring semester**

CLRS 206	Cross-sectional Anatomy		2
CLRS 318	Nuclear Medicine Procedures II		2
CLRS 322 & CLRZ 322	Nuclear Medicine Physics and Instrumentation II and Nuclear Medicine Physics and Instrumentation Laboratory II		4
CLRS 394	Clinical Education II		2
CLRS 398	Introduction to Research		1
Elective			3
Term Hours:			14

**Summer semester**

CLRS 319	Nuclear Medicine Procedures III		3
CLRS 395	Clinical Education III		3
Term Hours:			6

**Senior year**

Fall semester			Hours
CLRS 408	Introduction to Computed Tomography (CT)		2
CLRS 417	Nuclear Medicine Procedures IV		3
CLRS 461 & CLRZ 461	Radiopharmaceutical: Preparation and Quality Control and Radiopharmacy Laboratory		3
CLRS 493	Clinical Education IV		3
CLRS 498	Senior Project		2
Term Hours:			13

**Spring semester**

CLRS 407	Introduction to PET/CT		2
CLRS 430	Radiobiology		2
CLRS 453	Quality Management in Nuclear Medicine		2
CLRS 488	Senior Seminar		3
CLRS 494	Clinical Education V		3
Term Hours:			12
Total Hours:			60

## Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy

The department offers a Bachelor of Science in Clinical Radiation Sciences with the following areas of concentration: radiography, nuclear medicine technology and radiation therapy. Upon meeting prerequisites and gaining admission to the program, students complete a three-year, full-time program that includes general education and professional course work. Graduates of each of the programs are eligible for national certification examinations in their respective area of concentration.

Upon completion of one of the concentrations, the graduate is eligible for the relevant national certification examination administered by the American Registry of Radiologic Technologists. Graduates of the nuclear medicine technology program also are eligible for the certification examination administered by the Nuclear Medicine Technology Certification Board.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Attain clinical competence in entry level radiation therapy procedures
- Communicate effectively with patients, staff and physicians in the radiation therapy department
- Demonstrate effective written communication
- Demonstrate critical thinking skills during their radiation therapy clinical experience
- Demonstrate critical thinking skills in developing a research project
- Demonstrate professionalism during their radiation therapy clinical experience

## Special requirements

### Entry-level program prerequisites

To be eligible for admission into any of the entry-level concentrations students must have completed the following prerequisites:

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
MATH 141	Algebra with Applications	3
BIOL 205	Basic Human Anatomy	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PHYS 101 & PHYZ 101	Foundations of Physics and Foundations of Physics Laboratory	4
PSYC 101	Introduction to Psychology	4
Humanities/fine arts elective <sup>1</sup>		

<sup>1</sup> VCU students – Select a course from the approved University Core humanities/fine arts list, including history, religion, literature, philosophy, foreign language, speech.

## English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in the following CLRS courses:

CLRS 208	Foundations of Patient Care
CLRS 232	Radiation Safety
CLRS 305	Orientation to Radiation Therapy
CLRS 309	Oncologic Patient Care
CLRS 314	Pathology and Treatment Principles I
CLRS 323	Radiation Therapy, Techniques and Applications
CLRS 341	Radiation Physics
CLRS 342	Physics for Radiation Therapy
CLRS 393	Clinical Education I
CLRS 394	Clinical Education II
CLRS 395	Clinical Education III
CLRS 412	Radiation Therapy Treatment Planning
CLRS 415	Pathology and Treatment Principles II
CLRS 430	Radiobiology
CLRS 455	Quality Management in Radiation Therapy
CLRS 493	Clinical Education IV
CLRS 494	Clinical Education V

## Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy

### Admission requirements for program

Pre-radiation sciences advising track 27-32

### Collateral requirements

HCMG 300	Health Care Organization and Services	3
HPEX 250	Medical Terminology	1
STAT 210	Basic Practice of Statistics	3
Total Hours		7

### Major requirements

CLRS 203	Pathophysiology I	3
CLRS 204	Pathophysiology I and II	3
CLRS 205	Exploring Radiation Sciences	1
CLRS 206	Cross-sectional Anatomy	2
CLRS 208	Foundations of Patient Care	4
CLRS 232	Radiation Safety	2
CLRS 305	Orientation to Radiation Therapy	2
CLRS 309	Oncologic Patient Care	2
CLRS 314	Pathology and Treatment Principles I	4
CLRS 323	Radiation Therapy, Techniques and Applications	4
CLRS 341	Radiation Physics	2
CLRS 342	Physics for Radiation Therapy	3
CLRS 390	Research Methods in the Radiation Sciences (writing and academic research)	2
CLRS 393	Clinical Education I <sup>2</sup>	2

CLRS 394	Clinical Education II <sup>2</sup>	2
CLRS 395	Clinical Education III <sup>2</sup>	3
CLRS 398	Introduction to Research (writing and academic research)	1
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 412	Radiation Therapy Treatment Planning	3
CLRS 415	Pathology and Treatment Principles II	4
CLRS 430	Radiobiology	2
CLRS 455	Quality Management in Radiation Therapy	2
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV <sup>2</sup>	3
CLRS 494	Clinical Education V <sup>2</sup>	3
CLRS 498	Senior Project	2
Total Hours		66

<sup>2</sup> These courses have variable credits. The credits indicated are the most commonly used in the entry-level curriculum.

### Open electives

Select 20 open elective credits 20

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Admission requirements for program 27-32 credits

##### Sophomore year

Fall semester		Hours
CLRS 203	Pathophysiology I	3
CLRS 205	Exploring Radiation Sciences	1
CLRS 208	Foundations of Patient Care	4
HCMG 300	Health Care Organization and Services	3
HPEX 250	Medical Terminology	1
STAT 210	Basic Practice of Statistics	3
Elective		1
Term Hours:		16

##### Spring semester

CLRS 204	Pathophysiology I and II	3
CLRS 206	Cross-sectional Anatomy	2
CLRS 232	Radiation Safety	2
Electives		9
Term Hours:		16

##### Summer semester

CLRS 305	Orientation to Radiation Therapy	2
Term Hours:		2

##### Junior year

##### Fall semester

CLRS 309	Oncologic Patient Care	2
CLRS 323	Radiation Therapy, Techniques and Applications	4
CLRS 341	Radiation Physics	2

CLRS 390	Research Methods in the Radiation Sciences	2
CLRS 393	Clinical Education I	2
Elective		3
Term Hours:		15
<b>Spring semester</b>		
CLRS 314	Pathology and Treatment Principles I	4
CLRS 342	Physics for Radiation Therapy	3
CLRS 394	Clinical Education II	2
CLRS 398	Introduction to Research	1
Electives		4
Term Hours:		14
<b>Summer semester</b>		
CLRS 395	Clinical Education III	3
Term Hours:		3
<b>Senior year</b>		
<b>Fall semester</b>		
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 415	Pathology and Treatment Principles II	4
CLRS 455	Quality Management in Radiation Therapy	2
CLRS 493	Clinical Education IV	3
CLRS 498	Senior Project	2
Term Hours:		13
<b>Spring semester</b>		
CLRS 412	Radiation Therapy Treatment Planning	3
CLRS 430	Radiobiology	2
CLRS 488	Senior Seminar	3
CLRS 494	Clinical Education V	3
Elective		3
Term Hours:		14
Total Hours:		93

## Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy (degree completion)

Full- or part-time opportunities to complete a baccalaureate degree are offered for technologists or therapists certified by the American Registry of Radiologic Technologists and/or the Nuclear Medicine Technology Certification Board. In addition to general education and professional course work, the student selects electives from a wide variety of courses, allowing the design of a program that best meets the goals and interests of the individual.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate effective written communication
- Demonstrate critical-thinking skills in developing a research project

### Special requirements

#### Prerequisites

ARRT Certification (or eligibility<sup>1</sup>) in radiation therapy

<sup>1</sup> Must be ARRT certified within two semesters of enrollment.

#### English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in CLRS 430.

## Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy (degree completion)

#### Certificate requirement

ARRT radiography certification 50

#### General education courses

English composition	3
Humanities	3
Natural/physical science	3
Social science	3
Total Hours	12

#### Collateral requirements

HCMG 300	Health Care Organization and Services	3
STAT 210	Basic Practice of Statistics	3
Total Hours		6

#### Major requirements

CLRS 206	Cross-sectional Anatomy	2
CLRS 390	Research Methods in the Radiation Sciences (writing and academic research)	2
CLRS 398	Introduction to Research (writing and academic research)	1
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 412	Radiation Therapy Treatment Planning	3
CLRS 430	Radiobiology	2
CLRS 498	Senior Project	2
Total Hours		14

#### Open electives

Select 8 open elective credits 8

#### Open electives (300-level+)

Select 30 open elective credits (300-level+) 30

### Total minimum requirement 120 credits



What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

## Sample outline (full-time option)

Credits toward admission for ARRT radiation therapy certification 50 credits

Year one			
Fall semester			Hours
CLRS	390	Research Methods in the Radiation Sciences	2
HCMG	300	Health Care Organization and Services	3
STAT	210	Basic Practice of Statistics	3
UNIV	111	Focused Inquiry I	3
Natural/physical science elective			3
Social science elective			3
Term Hours:			17
Spring semester			
CLRS	206	Cross-sectional Anatomy	2
CLRS	398	Introduction to Research	1
Humanities elective			3
Open electives			8
Term Hours:			14
Summer semester			
Electives (300 level+)			6
Term Hours:			6
Year two			
Fall semester			
CLRS	408	Introduction to Computed Tomography (CT)	2
CLRS	498	Senior Project	2
Electives (300 level+)			12
Term Hours:			16
Spring semester			
CLRS	412	Radiation Therapy Treatment Planning	3
CLRS	430	Radiobiology	2
Electives (300 level+)			12
Term Hours:			17
Total Hours:			70

## Sample outline (part-time option)

Credits toward admission for ARRT radiation therapy certification 50 credits

Year one			
Fall semester			Hours
HCMG 300	Health Care Organization and Services		3
UNIV 111	Focused Inquiry I		3
Natural/physical science elective			3
Term Hours:			9
Spring semester			
STAT 210	Basic Practice of Statistics		3

Social science elective		3
Term Hours:		6
Summer semester		
Open electives		6
Term Hours:		6
Year two		
Fall semester		
CLRS 390	Research Methods in the Radiation Sciences	2
Humanities elective		3
Open elective		2
Term Hours:		7
Spring semester		
CLRS 398	Introduction to Research	1
CLRS 412	Radiation Therapy Treatment Planning	3
Term Hours:		4
Summer semester		
Electives (300-level +)		6
Term Hours:		6
Year three		
Fall semester		
CLRS 206	Cross-sectional Anatomy	2
CLRS 498	Senior Project	2
Electives (300-level +)		3
Term Hours:		7
Spring semester		
CLRS 430	Radiobiology	2
Electives (300-level +)		3
Term Hours:		5
Summer semester		
Electives (300-level +)		6
Term Hours:		6
Year four		
Fall semester		
CLRS 408	Introduction to Computed Tomography (CT)	2
Electives (300-level +)		6
Term Hours:		8
Spring semester		
Electives (300-level +)		6
Term Hours:		6
Total Hours:		70

## Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy (second modality)

The department offers second modality B.S. degree concentrations for American Registry of Radiologic Technologists-certified radiographers who desire to continue their professional education and concentrate in radiation therapy, nuclear medicine technology or radiologist assistant. Upon meeting admission prerequisites, students complete a five-

semester, full-time course of study including didactic, laboratory and clinical education. Graduates are eligible for additional national professional certification examinations.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Attain clinical competence in entry level radiation therapy procedures
- Communicate effectively with patients, staff and physicians in the radiation therapy department
- Demonstrate effective written communication
- Demonstrate critical thinking skills during their radiation therapy clinical experience
- Demonstrate critical thinking skills in developing a research project
- Demonstrate professionalism during their radiation therapy clinical experience

## Special requirements

### Prerequisites

ARRT certification (or eligibility) in radiography <sup>1</sup>

Humanities course	3
English composition course	3
Social science course	3
Natural/physical science course	3

<sup>1</sup> Must be ARRT certified in radiography within two semesters of enrollment.

### English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in the following CLRS courses:

CLRS 305	Orientation to Radiation Therapy
CLRS 309	Oncologic Patient Care
CLRS 314	Pathology and Treatment Principles I
CLRS 323	Radiation Therapy, Techniques and Applications
CLRS 342	Physics for Radiation Therapy
CLRS 393	Clinical Education I
CLRS 394	Clinical Education II
CLRS 395	Clinical Education III
CLRS 412	Radiation Therapy Treatment Planning
CLRS 415	Pathology and Treatment Principles II
CLRS 430	Radiobiology
CLRS 455	Quality Management in Radiation Therapy
CLRS 493	Clinical Education IV
CLRS 494	Clinical Education V

Must complete statistics or meet requirements for STAT 210 prior to enrollment.

## Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy (second modality)

### Admission requirements

ARRT Radiation Therapy certification	50
General Education courses:	
English composition course	3
Humanities course	3
Natural/physical science course	3
Social/behavioral science course	3
Total Hours	62

### Major requirements

CLRS 206	Cross-sectional Anatomy	2
CLRS 305	Orientation to Radiation Therapy	2
CLRS 309	Oncologic Patient Care	2
CLRS 314	Pathology and Treatment Principles I	4
CLRS 323	Radiation Therapy, Techniques and Applications	4
CLRS 342	Physics for Radiation Therapy	3
CLRS 390	Research Methods in the Radiation Sciences (writing and academic research)	2
CLRS 393	Clinical Education I <sup>2</sup>	2
CLRS 394	Clinical Education II <sup>2</sup>	2
CLRS 395	Clinical Education III <sup>2</sup>	3
CLRS 398	Introduction to Research (writing and academic research)	1
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 412	Radiation Therapy Treatment Planning	3
CLRS 415	Pathology and Treatment Principles II	4
CLRS 430	Radiobiology	2
CLRS 455	Quality Management in Radiation Therapy	2
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV <sup>2</sup>	3
CLRS 494	Clinical Education V <sup>2</sup>	3
CLRS 498	Senior Project	2
STAT 210	Basic Practice of Statistics	3
Total Hours		54

<sup>2</sup> These courses have variable credits. The credits indicated are the most commonly used in the entry-level curriculum.

### Restricted electives

Select four restricted elective credits	4
---	---

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Minimum credits from ARRT certification and courses from accredited college or university 62 credits**

**Junior year**

Fall semester			Hours
CLRS 305	Orientation to Radiation Therapy		2
CLRS 309	Oncologic Patient Care		2
CLRS 323	Radiation Therapy, Techniques and Applications		4
CLRS 390	Research Methods in the Radiation Sciences		2
CLRS 393	Clinical Education I		2
STAT 210	Basic Practice of Statistics		3
Term Hours:			15

**Spring semester**

CLRS 206	Cross-sectional Anatomy		2
CLRS 314	Pathology and Treatment Principles I		4
CLRS 342	Physics for Radiation Therapy		3
CLRS 394	Clinical Education II		2
CLRS 398	Introduction to Research		1
Term Hours:			12

**Summer semester**

CLRS 395	Clinical Education III		3
Term Hours:			3

**Senior year**

Fall semester			Hours
CLRS 408	Introduction to Computed Tomography (CT)		2
CLRS 415	Pathology and Treatment Principles II		4
CLRS 455	Quality Management in Radiation Therapy		2
CLRS 493	Clinical Education IV		3
CLRS 498	Senior Project		2
Term Hours:			13

**Spring semester**

CLRS 412	Radiation Therapy Treatment Planning		3
CLRS 430	Radiobiology		2
CLRS 488	Senior Seminar		3
CLRS 494	Clinical Education V		3
Electives			4
Term Hours:			15
Total Hours:			58

## Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiography

The department offers a Bachelor of Science in Clinical Radiation Sciences with the following areas of concentration: radiography, nuclear medicine technology and radiation therapy. Upon meeting prerequisites and gaining admission to the program, students complete a three-year,

full-time program that includes general education and professional course work. Graduates of each of the programs are eligible for national certification examinations in their respective area of concentration.

Upon completion of one of the concentrations, the graduate is eligible for the relevant national certification examination administered by the American Registry of Radiologic Technologists. Graduates of the nuclear medicine technology program also are eligible for the certification examination administered by the Nuclear Medicine Technology Certification Board.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Attain clinical competence in entry level radiography procedures
- Communicate effectively with patients, staff and physicians in the radiography department
- Demonstrate effective written communication
- Demonstrate critical thinking skills during their radiography clinical experience
- Demonstrate critical thinking skills in developing a research project
- Demonstrate professionalism during their radiography clinical experience

## Special requirements

### Entry-level program prerequisites

To be eligible for admission into any of the entry-level concentrations students must have completed the following prerequisites:

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
MATH 141	Algebra with Applications	3
BIOL 205	Basic Human Anatomy	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PHYS 101 & PHYZ 101	Foundations of Physics and Foundations of Physics Laboratory	4
PSYC 101	Introduction to Psychology	4
Humanities/fine arts elective <sup>1</sup>		

<sup>1</sup> VCU students – Select a course from the approved University Core humanities/fine arts list, including history, religion, literature, philosophy, foreign language, speech.

## English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in the following CLRS courses:

CLRS 201	Radiographic Imaging and Exposure I	3
CLRS 206	Cross-sectional Anatomy	2
CLRS 208	Foundations of Patient Care	4
CLRS 211	Radiographic Procedures I	4
CLRS 212	Radiographic Procedures II	2
CLRS 294	Introduction to Clinical Education I	0.5

CLRS 295	Introduction to Clinical Education II	1
CLRS 312	Radiographic Procedures III	2
CLRS 320	Radiographic Imaging and Exposure II	3
CLRS 331	Radiographic Imaging Equipment	3
CLRS 341	Radiation Physics	2
CLRS 393	Clinical Education I	2-5
CLRS 394	Clinical Education II	2-4
CLRS 395	Clinical Education III	2-6
CLRS 430	Radiobiology	2
CLRS 493	Clinical Education IV	1-5
CLRS 494	Clinical Education V	1-5
CLRZ 201	Radiographic Imaging and Exposure I Laboratory	1

## Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiography

### Admission requirements for program

Pre-radiation sciences advising track 27-32

### Collateral requirements

HCMG 300	Health Care Organization and Services	3
HPEX 250	Medical Terminology	1
STAT 210	Basic Practice of Statistics	3
Total Hours		7

### Major requirements

CLRS 201 & CLRZ 201	Radiographic Imaging and Exposure I and Radiographic Imaging and Exposure I Laboratory	4
CLRS 203	Pathophysiology I	3
CLRS 204	Pathophysiology I and II	3
CLRS 205	Exploring Radiation Sciences	1
CLRS 206	Cross-sectional Anatomy	2
CLRS 208	Foundations of Patient Care	4
CLRS 211	Radiographic Procedures I	4
CLRS 212	Radiographic Procedures II	2
CLRS 232	Radiation Safety	2
CLRS 294	Introduction to Clinical Education I	.5
CLRS 295	Introduction to Clinical Education II	1
CLRS 312	Radiographic Procedures III	2
CLRS 320	Radiographic Imaging and Exposure II	3
CLRS 331	Radiographic Imaging Equipment	3
CLRS 332	Radiographic Pathology	3
CLRS 341	Radiation Physics	2
CLRS 390	Research Methods in the Radiation Sciences (writing and academic research)	2
CLRS 393	Clinical Education I	2.5
CLRS 394	Clinical Education II	2
CLRS 395	Clinical Education III	3
CLRS 398	Introduction to Research (writing and academic research)	1

CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 430	Radiobiology	2
CLRS 488	Senior Seminar	3
CLRS 493	Clinical Education IV	3
CLRS 494	Clinical Education V	3
CLRS 498	Senior Project	2
Total Hours		65

### Open electives

Select 15 open elective credits	15
Select 6 open electives (300-level+)	6

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Admission requirements for program 27-32 credits

#### Sophomore year

Fall semester	Hours
CLRS 203 Pathophysiology I	3
CLRS 205 Exploring Radiation Sciences	1
CLRS 206 Cross-sectional Anatomy	2
CLRS 208 Foundations of Patient Care	4
HPEX 250 Medical Terminology	1
STAT 210 Basic Practice of Statistics	3
Term Hours:	14

#### Spring semester

CLRS 201 & CLRZ 201 Radiographic Imaging and Exposure I and Radiographic Imaging and Exposure I Laboratory	4
CLRS 204 Pathophysiology I and II	3
CLRS 211 Radiographic Procedures I	4
CLRS 232 Radiation Safety	2
CLRS 294 Introduction to Clinical Education I	0.5
Term Hours:	13.5

#### Summer semester

CLRS 212 Radiographic Procedures II	2
CLRS 295 Introduction to Clinical Education II	1
Term Hours:	3

#### Junior year

##### Fall semester

CLRS 312 Radiographic Procedures III	2
CLRS 320 Radiographic Imaging and Exposure II	3
CLRS 341 Radiation Physics	2
CLRS 390 Research Methods in the Radiation Sciences	2
CLRS 393 Clinical Education I	2.5
Elective	3
Term Hours:	14.5

##### Spring semester

CLRS 331 Radiographic Imaging Equipment	3
---	---

CLRS 332	Radiographic Pathology	3
CLRS 394	Clinical Education II	2
CLRS 398	Introduction to Research	1
Electives		6
Term Hours:		15
<b>Summer semester</b>		
CLRS 395	Clinical Education III	3
Term Hours:		3
<b>Senior year</b>		
<b>Fall semester</b>		
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 493	Clinical Education IV	3
CLRS 498	Senior Project	2
HCMG 300	Health Care Organization and Services	3
Electives		6
Term Hours:		16
<b>Spring semester</b>		
CLRS 430	Radiobiology	2
CLRS 488	Senior Seminar	3
CLRS 494	Clinical Education V	3
Electives (300+ level)		6
Term Hours:		14
Total Hours:		93

Minimum 120 credits required for degree.

## Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiography (degree completion)

Full- or part-time opportunities to complete a baccalaureate degree are offered for technologists or therapists certified by the American Registry of Radiologic Technologists and/or the Nuclear Medicine Technology Certification Board. In addition to general education and professional course work, the student selects electives from a wide variety of courses, allowing the design of a program that best meets the goals and interests of the individual.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate effective written communication
- Demonstrate critical-thinking skills in developing a research project

### Special requirements

#### Prerequisites

ARRT Certification (or eligibility<sup>1</sup>) in radiography

<sup>1</sup> Must be ARRT certified within two semesters of enrollment.

### English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in CLRS 430.

## Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiography (degree completion)

### Certificate requirement

ARRT radiography certification 50

### General Education courses

English composition	3
Humanities	3
Natural/physical science	3
Social science	3
Total Hours	12

### Collateral requirements

HCMG 300	Health Care Organization and Services	3
STAT 210	Basic Practice of Statistics	3
Total Hours		6

### Major requirements

CLRS 206	Cross-sectional Anatomy	2
CLRS 332	Radiographic Pathology	3
CLRS 390	Research Methods in the Radiation Sciences (writing and academic research)	2
CLRS 398	Introduction to Research (writing and academic research)	1
CLRS 408	Introduction to Computed Tomography (CT)	2
CLRS 430	Radiobiology	2
CLRS 498	Senior Project	2
Total Hours		14

### Open electives

Select 8 open elective credits 8

### Open electives (300-level+)

Select 30 open elective (300-level+) credits 30

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Sample outline (full-time option)

Credits toward admission for ARRT radiography certification 50 credits



**Year one****Fall semester**

	Hours
CLRS 390 Research Methods in the Radiation Sciences	2
HCMG 300 Health Care Organization and Services	3
STAT 210 Basic Practice of Statistics	3
UNIV 111 Focused Inquiry I	3
Natural/physical science elective	3
Social science elective	3
Term Hours:	17

**Spring semester**

CLRS 206 Cross-sectional Anatomy	2
CLRS 332 Radiographic Pathology	3
CLRS 398 Introduction to Research	1
Elective (300-level +)	3
Humanities elective	3
Open electives	2
Term Hours:	14

**Summer semester**

Open electives	6
Term Hours:	6

**Year two****Fall semester**

CLRS 408 Introduction to Computed Tomography (CT)	2
CLRS 498 Senior Project	2
Electives (300-level +)	12
Term Hours:	16

**Spring semester**

CLRS 430 Radiobiology	2
Electives (300-level +)	15
Term Hours:	17

---



---

 Total Hours: 70
**Sample outline (part-time option)****Credits toward admission for ARRT radiography certification 50 credits****Year one****Fall semester**

	Hours
HCMG 300 Health Care Organization and Services	3
UNIV 111 Focused Inquiry I	3
Natural/physical science elective	3
Term Hours:	9

**Spring semester**

STAT 210 Basic Practice of Statistics	3
Social science elective	3
Term Hours:	6

**Summer semester**

Open electives	6
Term Hours:	6

**Year two****Fall semester**

CLRS 390 Research Methods in the Radiation Sciences	2
Humanities elective	3
Open elective	1
Term Hours:	6

**Spring semester**

CLRS 332 Radiographic Pathology	3
CLRS 398 Introduction to Research	1
Open elective	1
Term Hours:	5

**Summer semester**

Electives (300-level +)	6
Term Hours:	6

**Year three****Fall semester**

CLRS 206 Cross-sectional Anatomy	2
CLRS 498 Senior Project	2
Electives (300-level +)	3
Term Hours:	7

**Spring semester**

CLRS 430 Radiobiology	2
Elective (300-level +)	3
Term Hours:	5

**Summer semester**

Electives (300-level +)	6
Term Hours:	6

**Year four****Fall semester**

CLRS 408 Introduction to Computed Tomography (CT)	2
Electives (300-level +)	6
Term Hours:	8

**Spring semester**

Electives (300-level +)	6
Term Hours:	6
Total Hours:	70

## Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiologist assistant (second modality)

The department offers second modality B.S. degree concentrations for American Registry of Radiologic Technologists-certified radiographers who desire to continue their professional education and concentrate in radiation therapy, nuclear medicine technology or radiologist assistant. Upon meeting admission prerequisites, students complete a five-semester, full-time course of study including didactic, laboratory and clinical education. Graduates are eligible for additional national professional certification examinations.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Attain clinical competence in entry level radiologist assistant procedures
- Communicate effectively with patients, staff and physicians in the radiology department
- Demonstrate effective written communication
- Demonstrate critical thinking skills during their radiologist assistant clinical experience
- Demonstrate critical thinking skills in developing a research project
- Demonstrate professionalism during their radiologist assistant clinical experience

## Special requirements

Students must have a minimum of two years of full-time clinical experience at the time of enrollment.

## Prerequisites

### ARRT certification (or eligibility\*) in radiography

ARRT certification in radiography (or eligibility) <sup>1</sup>

Humanities course	3
English composition course	3
Social science course	3
Natural/physical science course	3
Open electives	2

<sup>1</sup> Must be ARRT certified in radiography within two semesters of enrollment.

## English proficiency

All non-native applicants must meet VCU's minimum TOEFL score requirements prior to admission.

Enrolled students must earn a minimum grade of C in the following CLRS courses:

CLRS 203	Pathophysiology I	3
CLRS 204	Pathophysiology I and II	3
CLRS 403	Advanced Patient Care for the Imaging Professional	3
CLRS 430	Radiobiology	2
CLRS 493	Clinical Education IV	1-5
CLRS 494	Clinical Education V	1-5
CLRZ 403	Advanced Patient Care for the Imaging Professional	1

Must complete statistics or meet requirements for STAT 210 prior to enrollment.

## Degree requirements for Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiologist assistant (second modality)

### General education requirements

English composition course	3
Humanities course	3
Natural/physical science course	3
Social/behavioral science course	3
Open electives	2
<b>Total Hours</b>	<b>14</b>

### Collateral requirements

Proficiency credits (ARRT radiography certification)		50
HCMG 300	Health Care Organization and Services	3
STAT 210	Basic Practice of Statistics	3
Total Hours		56

### Major requirements

CLRS 203	Pathophysiology I	3
CLRS 204	Pathophysiology I and II	3
CLRS 206	Cross-sectional Anatomy	2
CLRS 332	Radiographic Pathology	3
CLRS 390	Research Methods in the Radiation Sciences (writing and academic research)	2
CLRS 398	Introduction to Research (writing and academic research)	1
CLRS 403 & CLRZ 403	Advanced Patient Care for the Imaging Professional and Advanced Patient Care for the Imaging Professional	4
CLRS 430	Radiobiology	2
CLRS 471	Radiology Imaging Procedures for Radiologist Assistants I and II	3
CLRS 472	Radiology Imaging Procedures for Radiologist Assistants I and II	3
CLRS 475	Medical Imaging Fundamentals for Radiologist Assistants	3
CLRS 481	Applied Pharmacology for Radiation Sciences	3
CLRS 493	Clinical Education IV	3
CLRS 494	Clinical Education V	3
CLRS 498	Senior Project	2
Total Hours		40

### Restricted electives

Select 10 restricted elective credits	10
---------------------------------------	----

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Minimum credits from ARRT certification and courses from accredited college or university 64 credits**

**Junior year**

<b>Fall semester</b>		<b>Hours</b>
CLRS 203	Pathophysiology I	3
CLRS 206	Cross-sectional Anatomy	2
CLRS 390	Research Methods in the Radiation Sciences (writing and academic research)	2
HCMG 300	Health Care Organization and Services	3
STAT 210	Basic Practice of Statistics	3
Restricted elective		1
Term Hours:		14

**Spring semester**

CLRS 204	Pathophysiology I and II	3
CLRS 332	Radiographic Pathology	3
CLRS 398	Introduction to Research (writing and academic research)	1
CLRS 403 & CLRZ 403	Advanced Patient Care for the Imaging Professional and Advanced Patient Care for the Imaging Professional	4
Elective		3
Term Hours:		14

**Senior year**

<b>Fall semester</b>		
CLRS 471	Radiology Imaging Procedures for Radiologist Assistants I and II	3
CLRS 475	Medical Imaging Fundamentals for Radiologist Assistants	3
CLRS 493	Clinical Education IV	3
CLRS 498	Senior Project	2
Elective		3
Term Hours:		14

**Spring semester**

CLRS 430	Radiobiology	2
CLRS 472	Radiology Imaging Procedures for Radiologist Assistants I and II	3
CLRS 481	Applied Pharmacology for Radiation Sciences	3
CLRS 494	Clinical Education V	3
Restricted elective		3
Term Hours:		14
Total Hours:		56

# SCHOOL OF THE ARTS

The School of the Arts offers 25 degree programs and comprises more than 3,000 students. With the inclusion of our campus in Qatar come an additional four programs. It all began as one night class taught by Theresa Pollak in the fall of 1928.

The school strives to be a stimulating community of students and teachers who cross the boundaries of conventional art and design disciplines, apply aesthetic and intellectual vision to the expression of complex ideas, value artistic tradition and experimentation in the search for creative solutions, connect international experience with professional education, integrate technical skills with theoretical understanding and care about the impact of their work on people.

## Administration

325 North Harrison Street  
P.O. Box 842519  
Richmond, Virginia 23284-2519  
(804) 828-2787  
Fax: (804) 828-6469  
a (<http://www.vcu.edu/arts>)rts.vcu.edu (<http://arts.vcu.edu>)

**James Frazier, Ed.D.**  
Interim dean

**Akel I. Kahera**  
Dean for VCU-Qatar

**Margaret Lindauer, Ph.D.**  
Interim associate dean for graduate studies and faculty affairs

**John Guthmiller**  
Senior associate dean for academic affairs

**Christina Lindholm**  
Associate dean for curriculum and assessment

**Nancy M. Scott**  
Associate dean for academic administration

**Jody Symula**  
Assistant dean for student affairs

## Accreditation

VCU School of the Arts is accredited by the National Association of Schools of Art and Design, the National Association of Schools of Dance, the National Association of Schools of Music, and the National Association of Schools of Theatre.

## Visual arts

### Visual arts degree programs

Art education, art history, cinema, communication arts, craft and material studies, fashion (design and fashion merchandising), graphic design, interior design, kinetic imaging, painting and printmaking, and sculpture

National Association of Schools of Art and Design

### Art education (bachelor's and master's degrees)

National Association of Schools of Art and Design, National Council for Accreditation for Teacher Education, Virginia Department of Education

### Interior design (bachelor's degree)

National Association of Schools of Art and Design, Council for Interior Design Accreditation

## Performing arts

### Dance and choreography (bachelor's degree)

National Association of Schools of Dance

### Music (bachelor's and master's degrees)

National Association of Schools of Music

- Music education concentrations (bachelor's and master's degrees)  
National Council for Accreditation National Association of Schools of Music, for Teacher Education, Virginia Department of Education

### Theatre (bachelor's and master's degrees)

## Programs

The School of the Arts offers degrees in the following areas of study:

### Advanced Media Production Technology

- Post-baccalaureate undergraduate certificate

### Art Education

- Master of Art Education

### Art History

- Bachelor of Arts
- Master of Arts
- Doctor of Philosophy

### Arts

- Bachelor of Fine Arts with a concentration in art education

### Cinema

- Bachelor of Arts

### Communication Arts

- Bachelor of Fine Arts

### Craft and Material Studies

- Bachelor of Fine Arts
- See Fine Arts concentrations for master's option

### Dance and Choreography

- Bachelor of Fine Arts

### Design

- Master of Fine Arts (with concentrations in interior environments and visual communications)

### Fashion

- Bachelor of Arts

- Bachelor of Fine Arts

### **Fine Arts**

- Master of Fine Arts (with concentrations in ceramics, fibers, furniture design, glassworking and jewelry/metalworking; kinetic imaging; painting or printmaking; photography and film; sculpture)

### **Graphic Design**

- Bachelor of Fine Arts

### **Interior Design**

- Bachelor of Fine Arts

### **Kinetic Imaging**

- Bachelor of Fine Arts
- See Fine Arts concentrations for master's option

### **Music**

- Bachelor of Arts
- Bachelor of Music
- Master of Music

### **Painting and Printmaking**

- Bachelor of Fine Arts
- See Fine Arts concentrations for master's option

### **Photography and Film**

- Bachelor of Fine Arts
- See Fine Arts concentrations for master's option

### **Sculpture**

- Bachelor of Fine Arts
- See Fine Arts concentrations for master's option

### **Theatre**

- Bachelor of Arts
- Bachelor of Fine Arts
- Master of Fine Arts

## **School of the Arts Visual Resource Center**

VCU's Cabell Library houses an extensive collection of books, publications and magazines on the visual and performing arts. VCU subscribes to ARTstor, the largest online image bank for the arts.

VCU is a short distance from Washington, D.C., Baltimore, Philadelphia and New York and the museums, libraries and research facilities in those urban areas.

## **Undergraduate information**

### **General information**

Students who have matriculated in a professional curriculum receive enrollment preference for courses in their program. However, unless otherwise indicated, all courses are open to any student in the university.

Because of the sequence in which course work is arranged, only transfer students will be considered for mid-year admission. With the exception of

art history classes, all courses must be taken in their numerical sequence unless approved by the chair of the department in which they are listed.

In many of the courses, a considerable amount of work is done outside the classroom. This work is done in addition to the work done in the scheduled classes students are required to attend. Departments within the school reserve the right to retain examples of student work for permanent collections. Before enrollment, students should contact the appropriate department chair for a more detailed curriculum outline than that which appears in this bulletin.

## **Academic requirements**

All majors in the School of the Arts must earn a minimum GPA of 2.0 in their major concentration as well as the overall GPA in order to meet the university requirements for graduation.

The department and the student's adviser periodically evaluate the record of each student. If at any time during undergraduate studies the department faculty concludes a student is not demonstrating adequate progress in the area of concentration, the student will be advised to withdraw from that department.

Some degree programs stipulate minimum GPA requirements in the major concentration higher than 2.0 and other special reviews to determine satisfactory progress in their programs. Students are advised to refer to the individual department sections in this bulletin detailing prerequisites (i.e. portfolio reviews, juries, recitals, progress review, etc.) that govern admission to advanced-level study.

Student participation in both credit- and noncredit-bearing department activities may be required. Students matriculating in School of the Arts degree programs are bound by the policies and procedures stipulated in this bulletin and in other current departmental student handbooks or policy documents of the school's academic departments in which students are registered for courses.

## **Special charges**

All full-time majors enrolled in the School of the Arts are charged a comprehensive fee each semester. The fee schedule is available on the Financial Aid website at [vcu.edu/enroll/sa/tuition](http://vcu.edu/enroll/sa/tuition) (<http://www.vcu.edu/enroll/sa/tuition>). The fees are prorated to the individual departments that determine the expenditures, resulting in a rebate to the students through materials, services and/or equipment, and may include models, field trips or special lectures. Students enrolled in any of the numerous courses that require an additional outlay for materials will be billed for those individual fees by the Student Accounting Department.

## **Internships and cooperative education**

The School of the Arts encourages qualified students to enter into limited and carefully selected internship arrangements. To assist students, departments and programs are encouraged to identify, evaluate and select internship arrangements that will expand and complement the scope of the student's educational experience, as well as support the missions of the university, school, and department or program.

Internship arrangements are coordinated by the individual department or program and are considered university-supported activities involving enrolled students and faculty. Participants in such arrangements are subject to all applicable university policies and procedures. These policies and procedures include, but are not limited to, conflict of interest, intellectual properties, faculty rights and responsibilities, and those



policies and procedures outlined in the VCU Insider Student Handbook and Resource Guide.

While the School of the Arts encourages student internship arrangements, it disallows student internship arrangements when family members serve in a supervisory capacity. Should such an internship arrangement become an option, the approval of the dean must be received prior to completing any final agreement.

The School of the Arts also participates in the Cooperative Education Program. Qualifying students can take part in this program through most departments. A full description of the program appears in the "Division of Student Affairs and Enrollment Services" section of this bulletin.

## Transfer students

Departmental faculty committees determine placement in all upper-level courses after evaluating the student's record, performance, audition and/or creative work. The student should contact the appropriate department chair at the time of acceptance to arrange for this evaluation before actual enrollment.

## Undergraduate credit by examination

Recognizing that VCU enrolls students of varying backgrounds and experiences, the School of the Arts provides its students the opportunity to accelerate their education through "credit by examination." The conditions under which credit by examination may be given as well as the procedures are outlined in the "Admission to the University" section of this bulletin.

## 500-level courses

500-level courses are available only to upper-division undergraduate students with the approval of the chair of the department in which the course is offered.

## Arts honors

Undergraduate arts majors may earn arts honors. A student must be enrolled in The Honors College and a major within the School of the Arts. To earn arts honors, students must complete 15 credits of arts honors courses and a senior capstone course or experience (this varies with each major).

Arts honors graduates will be recognized at commencement with special regalia, and the distinction is noted on the transcript.

Inquires should be directed to Jody Symula, director of student services. Please email [jlsymula@vcu.edu](mailto:jlsymula@vcu.edu) for an advising appointment.

## Advanced Media Production Technology, Certificate in (Post-baccalaureate undergraduate certificate)

The certificate in advanced media production technology is a 24-credit post-baccalaureate undergraduate certificate program available to students pursuing the study of advanced digital media and post-production techniques. The certificate is designed to blend creative skills with the technical expertise required to compete for employment in the field of digital media. Students in the program are encouraged to approach the development of digital media with a cross-disciplinary, entrepreneurial spirit and to apply information and communications technology in novel ways. Students who receive a certificate through this

program equip themselves for many opportunities in the professional digital media community of both production and post-production providers.

## Special requirements

Students must possess a baccalaureate degree from an accredited academic institution and apply through the School of the Arts for admission. A minimum GPA of 2.5 is required for graduation.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

1. Evaluate and determine production goals for digital media
2. Create and produce professional-level digital media
3. Demonstrate broad-based knowledge in the components of audio production
4. Demonstrate broad-based knowledge in the core components of post-production
5. Work in professional post-production business and virtual production environments

## Degree requirements for Advanced Media Production Technology, Certificate in (Post-baccalaureate undergraduate certificate)

AMPT 401	Listen and Capture	3
AMPT 402	Editorial Storytelling	3
AMPT 403	Emerging Digital Cinema	3
AMPT 404	Script	3
Area of emphasis (select one)		3
AMPT 495	Sound Manipulation	
AMPT 496	Finishing the Story	
AMPT 497	Mastering Digital Cinema	
Electives (select three) <sup>1</sup>		9
AMPT 422	Audio for Gaming	
AMPT 423	Motion Graphics	
AMPT 424	Music Production Techniques	
AMPT 425	Light	
AMPT 426	Foley and Sound Design	
Total Hours		24

<sup>1</sup> Additional electives may be available, please consult adviser for options.

## Sample plan of study

Fall semester		Hours
AMPT 401	Listen and Capture	3
AMPT 402	Editorial Storytelling	3
AMPT 403	Emerging Digital Cinema	3
AMPT 404	Script	3
Term Hours:		12
Spring semester		

AMPT 495	Sound Manipulation	3
or AMPT 496	or Finishing the Story	
or AMPT 497	or Mastering Digital Cinema	
AMPT electives		9
Term Hours:		12
Total Hours:		24

## Art Foundation Program

**Elissa Armstrong**

Director

[arts.vcu.edu/programs/art-foundation](http://arts.vcu.edu/programs/art-foundation) (<http://arts.vcu.edu/programs/art-foundation>)

The mission of the Art Foundation Program is to provide an intellectually rigorous, studio-based experience in the fundamental issues of art and design. The program seeks to develop in its students an enthusiasm for their work, a means to reflect analytically and an ability to cultivate skills that will serve throughout their education. The Art Foundation Program seeks to establish connections between programs in art and design and to participate in a larger forum of ideas and concepts relevant to all of the disciplines.

Completion of the Art Foundation Program is a prerequisite for entry into all fine art and design departments: Art Education, Communication Arts, Craft and Material Studies, Fashion Design, Graphic Design, Interior Design, Kinetic Imaging, Painting and Printmaking, Photography and Film, and Sculpture and Extended Media. Art Foundation provides the basic concepts, skills and experience necessary to pursue advanced studio work in each department. Students become affiliated with a major department after the departmental portfolio reviews in the spring semester of the Art Foundation year. At that time the student applies to the department of his or her choice. Department acceptance is competitive and is based on individual student performance and potential in their chosen area.

Transfer students in art and design are also required to complete the Art Foundation Program but may be awarded transfer credits based on a case-by-case basis.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Understand the fundamentals of art and design
- Introduce issues of contemporary art and design
- Peer and self-critique
- Introduce and encourage opportunities available throughout the university, city, state and abroad
- Develop a body of work for major department review
- A wide variety of approaches to working and making

## Requirements for Art Foundation Program

### Art Foundation studios

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3

ARTF 134	Time Studio	3
ARTF 139	Project	2
<b>Art history component</b>		
ARTH 103	Survey of Art I	6
& ARTH 104	and Survey of Art II	
Total Hours		20

This is a sample plan of the Art Foundation Program, please consult with your adviser for details. Please note the Art Foundation studio and research courses are not sequential.

### Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 133	Space Research	3
ARTF 139	Project	1
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I	3
University Core Curriculum Course		3
Term Hours:		16

### Spring semester

ARTF 132	Surface Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	1
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II	3
University Core Curriculum course		3
Term Hours:		16
Total Hours:		32

## Cinema Program

**Robert Tregenza**

Director

[arts.vcu.edu/cinema](http://arts.vcu.edu/cinema) (<http://arts.vcu.edu/cinema>)

The Cinema Program in the School of the Arts offers the Bachelor of Arts in Film, a degree that focuses on narrative feature and short films. The program prepares students for the art and craft of narrative filmmaking — particularly of independent narrative film — and is ideally supported with an undergraduate liberal arts education introducing students to a broad range of knowledge. Students in the program are encouraged to pursue a second major from VCU's College of Humanities and Sciences, the School of Business or other fields.

Students are admitted directly into the program and are not required to complete the Art Foundation Program. Majors can graduate after only three years of study, including two intensive summer semesters. Faculty members include professional filmmakers and courses utilize high-end digital equipment and motion picture technology.

- Cinema, Bachelor of Arts (B.A.) (p. 274)

## Cinema, Bachelor of Arts (B.A.)

**Robert Tregenza**

Program Head

[arts.vcu.edu/programs/undergraduate-programs/cinema-film-ba](http://arts.vcu.edu/programs/undergraduate-programs/cinema-film-ba) (<http://arts.vcu.edu/programs/undergraduate-programs/cinema-film-ba>)

The Bachelor of Arts in Cinema is designed for students who desire a program with an emphasis in film combined with a strong liberal arts component with a second undergraduate major or double minor in fields of study other than the arts. The program focuses on the art and craft of narrative filmmaking with an emphasis on the practices of U.S. independent filmmakers. The style and content of U.S. independent film are often closely aligned with European cinema and the program offers opportunities for international study options. Internships with professional film organizations in the U.S. and abroad are available on a competitive basis.

Full-time students enrolled in this program may graduate with the B.A. after three years of study by completing required course work in the summer semester following the third year.

Filmmaking courses in the program, which comprise approximately one-third of the curriculum, focus on the understanding and creative use of digital film equipment. Students interested in both digital and traditional celluloid film and documentary, as well as narrative techniques, should review the school's Bachelor of Fine Arts program in photography and film (p. 328), which offers nearly two-thirds of the curriculum in film courses. Students interested in animation or experimental video should review the B.F.A. in Kinetic Imaging (p. 305) program.

The B.A. in Cinema requires a minimum of 120 credits, including 48 in the major. At least 45 of the 120 credits must be taken as 300- to 500-level courses.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Operate film equipment and screenwriting, editing, scheduling and budgeting software
- Gain an international film perspective
- Create all aspects of the art of storytelling
- Produce narrative short films
- Develop creative collaborations
- Synthesize other disciplines with filmmaking

## Special requirements

Majors in the Cinema Program are required to complete a second major or double minor within the College of Humanities and Sciences. Students must also maintain a minimum cumulative GPA of 2.5 in the program. Students' grades will be reviewed at midterm and at the end of each semester for the first three semesters. After completion of three semesters, portfolios and course evaluations, as well as GPAs, are reviewed to determine if the student may continue in the program.

## Degree requirements for Cinema, Bachelor of Arts (B.A.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3

Approved humanities/fine arts	3
Approved natural/physical sciences	3-4
Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
<b>Additional General Education requirements</b>	
General Education courses	9
Total Hours	30-33

### Collateral requirements

ARTH 270	History of the Motion Picture I	6
& ARTH 271	and History of the Motion Picture II	
Second major or two minors in the College of Humanities and Sciences		30-48
Total Hours		36-54

### Major requirements

CINE 100	Visual Storytelling	2
CINE 101	Visual Storytelling	2
CINE 200	Cinema Form and Concept I	2
CINE 201	Cinema Form and Concept II	2
CINE 300	Cinema Form and Concept III	2
CINE 301	Cinema Form and Concept IV	2
CINE 390	Digital Cinema Production Intensive I	15
CINE 490	Digital Cinema Production Intensive II	15
Total Hours		42

### Open electives or second major or minor courses

Select 12 credits in open electives or second major or minor courses	12
--	----

### Total minimum requirement 120 credits

#### Electives

CINE 401	Advanced Cinema Production	4
CINE 495	Cinema as Art	3
CINE 496	Advanced Screenwriting Seminar	3
CINE 497	Expanded Cinema	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
ARTH 270	History of the Motion Picture I	3
CINE 100	Visual Storytelling	2
UNIV 111	Focused Inquiry I	3
Humanities/fine arts course (University Core)		3
Quantitative literacy course (University Core)		3
Term Hours:		14

#### Spring semester

ARTH 271	History of the Motion Picture II	3
CINE 101	Visual Storytelling	2
UNIV 112	Focused Inquiry II	3
Natural/physical sciences course (University Core)		3

Social/behavioral sciences course (University Core)	3
Term Hours:	14
<b>Sophomore year</b>	
<b>Fall semester</b>	
CINE 200 Cinema Form and Concept I	2
UNIV 200 Inquiry and the Craft of Argument	3
General Education course	3
Second major or minor courses	6
Second major or minor course or elective	3
Term Hours:	17
<b>Spring semester</b>	
CINE 201 Cinema Form and Concept II	2
General Education course	3
Second major or minor courses	6
Second major or minor course or elective	3
Term Hours:	14
<b>Summer semester</b>	
CINE 390 Digital Cinema Production Intensive I	15
Term Hours:	15
<b>Junior year</b>	
<b>Fall semester</b>	
CINE 300 Cinema Form and Concept III	2
General Education course	3
Second major or minor courses	12
Term Hours:	17
<b>Spring semester</b>	
CINE 301 Cinema Form and Concept IV	2
Second major or minor courses	6
Second major or minor courses or electives	6
Term Hours:	14
<b>Summer semester</b>	
CINE 490 Digital Cinema Production Intensive II (capstone)	15
Term Hours:	15
Total Hours:	120

## Department of Art Education

**Sara Wilson McKay, Ph.D.**

Associate professor and chair

[arts.vcu.edu/arteducation](http://arts.vcu.edu/arteducation) (<http://arts.vcu.edu/arteducation>)

The Department of Art Education supports instruction in art that encourages the construction of meaning. Faculty and students are actively involved with the art world, education and local and global communities through art-based service-learning, visual culture studies, critical thinking, exhibition, assessment, curriculum, critical theory and emerging digital technologies (virtual and interactive).

The department emphasizes interdisciplinary connections throughout the School of the Arts and the university as a whole. Through their own research and instruction, art teacher candidates engage their students and themselves in traditional and nontraditional forms of inquiry to contribute to the continuing growth and strength of the profession.

- Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in art education (p. 276)

## Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in art education

The Bachelor of Fine Arts in Arts with a concentration in art education is an approved teacher preparation program that complies with the professional standards of the Virginia Department of Education and the Southern Association of Colleges and Schools. It is further accredited by the National Council for Accreditation of Teacher Education and the National Association of Schools of Art and Design. All of these agencies assure the highest professional program standards. Graduates of the program are eligible for Virginia teacher licensure to teach art in pre-kindergarten through grade 12.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Students will develop a professional philosophical position about the relevance and importance of art education.
- Students will implement/acquire a variety of art instructional strategies that
  - a. reflect an understanding of the artistic, cognitive, emotional and social development of children as well as
  - b. national, state and local curricular standards and
  - c. assessment techniques in order to meet the needs of diverse learners.
- Students will be able to create and adapt learning environments that address the needs of all students.
- Students will be able to design assessment methods to
  - a. measure student knowledge and skills,
  - b. improve student learning and
  - c. further professional practice.
- Students will teach art in ways that engage traditional and contemporary artists (diverse in regards to gender, ethnicity, sexual identity, social class and other dimensions of identity).
- Students will seek internships, service-learning positions and local, national and international experiences that lead to research and deepen engagement with diverse communities.

## Special requirements

### Admission

Undergraduate students admitted to the School of the Arts who have successfully completed the Art Foundation Program (or the equivalent at another institution) are eligible to apply through the Department of Art Education to enter the program.

Transfer students and students currently attending VCU must have a minimum cumulative GPA of 2.0 to be considered for departmental admission; however, there is a higher cumulative GPA requirement of 2.8 for departmental admission to teacher preparation (see below for more information).

### Accepted students

Accepted students are required to attend an orientation session with an academic adviser from the Department of Art Education. Transfer students, second-degree-seeking students, double majors and change

of major students are required to meet with the administrative director prior to beginning course work in the department. The name and contact information of academic advisers may be obtained from the Department of Art Education.

## Art education policy of reasonable progress

A student seeking a B.F.A. in Arts with a concentration in art education who does not enroll in courses in the major for three or more consecutive semesters (not including summers) will be dismissed from the program. To continue in the program, students must reapply to the program, submitting a portfolio and undergoing a grade review. Declared double majors not enrolled in ARTE courses for three consecutive semesters (not including summers) are required to state their intention to continue the major in writing to the chair.

## Course failures and withdrawals

All students must successfully complete the courses outlined in the curriculum. Students must earn a minimum grade of C in all ARTE courses. A student who earns a grade of D or F or withdraws from any required course may repeat the course once. If a grade of D or F is earned in the repeated course or if the student withdraws, the student will be terminated from the program. Students with special circumstances who wish to remain in the major must appeal to the chair and receive approval in writing to continue in the program.

## Cautionary status

If a student's GPA falls below a 2.8 or if a faculty member raises concerns about a student's professional disposition at any point, the student will be put on cautionary status. The chair will review students designated with cautionary status each semester to determine continuation in the program. Students will be notified if they are placed on cautionary status.

## Pre-teacher preparation

During the first two semesters in the Department of Art Education, students should complete ARTE 310 during the fall semester and ARTE 311 during the spring semester. Note: ARTE 310 is a prerequisite of ARTE 311.

Students will be required to register for and take the required Praxis I exams (or show proof of exemption by official SAT or ACT score reports) and take the required Virginia Communication and Literacy Assessment exam during ARTE 310. Students must successfully pass their Praxis I and VCLA exams in order to be eligible for departmental admission into teacher preparation (see below for further explanation). Any student that has not successfully passed the Praxis I exams by the time they complete ARTE 311 must set up a meeting with the department chair.

It is advised that students complete ARTE 250, EDUS 301 and TEDU 330/ARTE 450 during their first year in the Department of Art Education.

## Teacher Preparation Program

All students are required to apply for teacher preparation during ARTE 311. Students who do not have passing test scores at that time will be eligible to reapply in the fall for spring teacher prep admission. Students are granted provisional teacher prep acceptance pending successful second year review.

Applications are due to the administrative director by established deadlines of each semester. If students do not complete their applications on time with hard copies of passing score reports, they will not be guaranteed enrollment in ARTE 401 the following semester.

Requirements for departmental admission to teacher preparation:

- Submission of completed Application to Teacher Preparation form by established deadline
- Minimum of 2.8 cumulative GPA
- Successful completion of ARTE 310 and ARTE 311 (six credits)
- Passing scores on required Praxis I exams or exemption with SAT or ACT scores ([www.ets.org](http://www.ets.org)) (<http://www.ets.org>)
- Passing scores on required VCLA
- No record of a felony conviction
- Completion of the Dispositions Acknowledgement Form (included with departmental Application for Teacher Preparation)
- Successful second-year review

Departmental admission to the Teacher Preparation Program is required for enrollment in practicum courses (ARTE 401 and ARTE 402) and clinical internship (ARTE 404, TEDU 485 and TEDU 486). Note: ARTE 401 is a prerequisite of ARTE 402. Enrollment is granted to ARTE 401 and ARTE 402 through an override from the Department of Art Education.

## Second-year review

A review of student work, GPA and dispositions takes place at the completion of ARTE 311. Reviews are rated satisfactory unsatisfactory or provisional. The student must receive a satisfactory or provisional evaluation from the faculty to continue in the program. Students who receive provisional approval will be reviewed by the chair after each practicum to determine continuation in the program.

Students must register for and take the required Praxis II: Art Content Knowledge exam ([www.ets.org](http://www.ets.org)) (<http://www.ets.org>) before they apply for clinical internship (student teaching).

During teacher preparation, students will continue to complete required art history, studio and general studies course work.

## Clinical internship

All students are required to complete a full semester of clinical internship (student teaching). Students must complete and submit an application to clinical internship by the established deadline in order to be eligible. If students do not complete their applications on time with hard copies of passing score reports, they will not be guaranteed acceptance into clinical internship. Students are granted provisional student teaching acceptance pending successful faculty practicum review.

Requirements for clinical internship:

- Departmental admission into the Teacher Preparation Program
- Submission of completed departmental application for clinical internship by established deadline
- Successful completion of all other required course work
- Minimum of 2.8 cumulative GPA
- Minimum of 3.0 GPA in art education courses and no grade lower than a C
- Passing scores on the Praxis I or exemption with SAT or ACT scores
- Passing scores on the Virginia Communication and Literacy Assessment
- Passing scores on the Praxis II: Art Content Knowledge exam
- Completion of the online Child Abuse Prevention training and certification of successful completion



- Submission of a tuberculosis screening must accompany the application for clinical internship and must be dated no more than a year from the expected date of completion of clinical internship
- Successful faculty practicum review

## Degree requirements for Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in art education

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

EDUS 301	Human Development and Learning	3
Non-Western history		3
Literature elective <sup>1</sup>		3
Total Hours		9

<sup>1</sup> See electives list below.

### Collateral requirements

#### Art Foundation Program

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	2

#### Art history

ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
------------------------	---	---

#### Additional requirements

PAPR 205	Painting, Basic	4
SCPT 211	Basic Sculpture I	4
2-dimensional elective <sup>1</sup>		3-4
3-dimensional elective <sup>1</sup>		3-4
Ceramics elective <sup>1</sup>		4
Contemporary art history <sup>1</sup>		3
Non-Western art history <sup>1</sup>		3
Photography elective <sup>1</sup>		3-4
Studio art or art history open electives (from ARTE, ARTH, COAR, CRAF, PAPR, PHTO, SCPT)		7
Upper-level art history (ARTH course at the 300 level or higher)		3
Total Hours		57-60

<sup>1</sup> See electives list below.

### Major requirements

ARTE 250	Computer Technology in Art Education	3
ARTE 301	Art for Elementary Teachers	3
ARTE 311	Art Education Curriculum and Instructional Procedures	3
ARTE 401	Art Education Elementary Materials and Practicum	4
ARTE 402	Art Education Secondary Materials and Practicum	4
ARTE 404	Clinical Internship Seminar (capstone)	1
ARTE 450 or SEDP 330	Art for the Exceptional Student Survey of Special Education	3
TEDU 485	Directed Student Teaching I	6
TEDU 486	Directed Student Teaching II	6
Total Hours		33

### Total minimum requirement 120 credits

#### Electives

##### 2-dimensional elective

ARTE 408	Two-dimensional Art Experiences	3
----------	---------------------------------	---

PAPR course numbered 200-499

PHTO course numbered 200-499

##### 3-dimensional elective

ARTE 409	Three-dimensional Art Experiences	3
----------	-----------------------------------	---

CRAF course numbered 200-499

SCPT course numbered 200-499

##### Ceramics elective

CRAF 240	Introduction to Ceramics	4
CRAF 241	Ceramics: Handbuilding	4
CRAF 242	Ceramics: Wheelthrowing	4

##### Contemporary art history

ARTH 302	Museums in the 21st Century	3
ARTH 330 & ARTH 339	20th-century Art and Architecture and Modern and Contemporary Art and Architecture of Latin America	6

ARTH 340	Art and Architecture of the United States	3
----------	---	---

ARTH 365	Modern and Contemporary Art I	3
ARTH 366	Modern and Contemporary Art II	3
ARTH 430	Modern Painting	3
ARTH 431	Modern Sculpture	3
ARTH 439	Studies in 20th-century Art	3

##### Literature

ENGL 201	Western World Literature I	3
ENGL 202	Western World Literature II	3
ENGL 203	British Literature I	3
ENGL 204	British Literature II	3
ENGL 205	American Literature I	3
ENGL 206	American Literature II	3
ENGL 215	Textual Analysis	3
ENGL/GSWs 236	Women in Literature	3
ENGL/TEDU 386	Children's Literature I	3

##### Non-Western art history

ARTH 207	Introduction to Non-Western Art	3
ARTH 245	Survey of Asian Art	3
ARTH 260	Islamic Art Survey	3
ARTH 261	Islamic Art Survey	3
ARTH 301	Art and Architecture of Ancient North America	3
ARTH 311	Islamic Art and the West Before 1200	3
ARTH 312	Islamic Art and the West From 1200 to 1600	3
ARTH 335	Pre-Columbian Art and Architecture	3
ARTH 338	Colonial Art and Architecture of Latin America	3
ARTH 339	Modern and Contemporary Art and Architecture of Latin America	3
ARTH 350/AFAM 413	African and Oceanic Art	3
ARTH/AFAM 358	African Art and Architecture	3
ARTH/AFAM 440	Contemporary Art and Architecture of Africa	3
ARTH course numbered 445-454		
<b>Photography elective</b>		
ARTE 407	Photography in Art Education	3
PHTO 243	Darkroom	3
PHTO 245	Design Photography I	3
PHTO 491	Topics in Photography and Film	1-4

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 133	Space Research	3
ARTF 139	Project	1
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I	3
Quantitative literacy course (University Core)		3
Term Hours:		16
Spring semester		
ARTF 132	Surface Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	1
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3
Term Hours:		16

#### Sophomore year

Fall semester		
ARTE 250	Computer Technology in Art Education	3
ARTE 310	Foundations of Art Education	3
EDUS 301	Human Development and Learning	3
SCPT 211	Basic Sculpture I	4

Humanities/fine arts course (University Core)		3
Term Hours:		16
<b>Spring semester</b>		
ARTE 311	Art Education Curriculum and Instructional Procedures	3
UNIV 200	Inquiry and the Craft of Argument	3
PAPR 205	Painting, Basic	4
Natural/physical sciences course (University Core)		3
Non-Western history		3
Term Hours:		16
<b>Junior year</b>		
<b>Fall semester</b>		
ARTE 401	Art Education Elementary Materials and Practicum	4
3-dimensional studio elective		3
Literature elective		3
Non-Western art history		3
Photography elective		3
Term Hours:		16
<b>Spring semester</b>		
ARTE 450 or TEDU 330	Art for the Exceptional Student or	3
CRAF 240	Introduction to Ceramics	4
2-dimensional studio elective		3
Contemporary art history		3
Term Hours:		13
<b>Senior year</b>		
<b>Fall semester</b>		
ARTE 402	Art Education Secondary Materials and Practicum	4
Studio/art history electives		7
Upper-level art history		3
Term Hours:		14
<b>Spring semester</b>		
ARTE 404	Clinical Internship Seminar	1
TEDU 485	Directed Student Teaching I	6
TEDU 486	Directed Student Teaching II	6
Term Hours:		13
Total Hours:		120

## Department of Art History

**Eric Garberson, Ph.D.**

Associate professor and interim chair

[arts.vcu.edu/arhistory](http://arts.vcu.edu/arhistory) (<http://arts.vcu.edu/arhistory>)

The Department of Art History offers programs that acquaint students with the humanistic discipline of art historical inquiry. While providing students with the opportunity for a broad education drawing on the liberal arts and humanities, the department also emphasizes a close bond with the studio and performing arts and enjoys a close relationship with the other departments in the School of the Arts.

The department offers a broad-based education in the humanistic discipline of art history at the baccalaureate, master's and doctoral levels.

Overseas studies are available through university-sponsored programs abroad in Europe and Asia. Graduate assistantships and fellowships are available to full-time graduate students.

- Art History, Bachelor of Arts (B.A.) with a concentration in:
  - Architectural history (p. 280)
  - Art historical (p. 282)
- Art history, minor in (p. 284)

## Art History, Bachelor of Arts (B.A.) with a concentration in architectural history

### Note: Admission to this program is temporarily suspended.

The architectural history concentration affords the student an excellent background for graduate work in architectural history and/or art history, as well as career opportunities in the field. Courses focus on cultures, historical periods and regions. The program also includes possibilities for directed research projects as well as museum internships. Given the region's rich and diverse architectural resources, this program provides an unusual opportunity for on-site studies.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Practice precise and thorough observation
- Write and speak effectively about art and architecture
- Acquire knowledge of key monuments, artists and art movements in the history of art
- Conduct research using art historical methods

### Note: Admission to this program is temporarily suspended.

### Special requirements

Art history majors must earn a minimum grade of C in each ARTH course to be applied to the curriculum requirements.

## Degree requirements for Art History, Bachelor of Arts (B.A.) with an architectural history concentration

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4

Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
Total Hours	21-24

### Additional General Education requirements

ANTH, GEOG, HIST or RELS	9
--------------------------	---

### Collateral requirements

ENGL 215	Textual Analysis	3
Select one of the following:		3
FREN 202	Intermediate French Readings	
ITAL 202	Intermediate Italian Readings	
SPAN 202	Intermediate Spanish Readings	
GRMN 202	Intermediate German II	
HIST (any)		12
Fine arts studio (CRAF, SCPT, PAPR or PHTO)		11
Total Hours		29

### Major requirements

ARTH 103	Survey of Art I	6
& ARTH 104	and Survey of Art II	
ARTH 317	History of Architecture	6
& ARTH 318	and History of Architecture	
ARTH 390	Art Historical Methods	3
ARTH capstone (select one course)		3
Non-Western art history (select two courses from the list below)		6
Western architectural history (select six courses from the list below)		18
Total Hours		42

### Open electives

Select 16-19 open elective credits	16-19
------------------------------------	-------

### Total minimum requirement 120 credits

#### Art history course selections

##### Western architectural history

ARTH 305	Classical Art and Architecture	3
ARTH 310	Medieval Art and Architecture	3
ARTH 315	Renaissance Art and Architecture	3
ARTH 320	Baroque and Rococo Art and Architecture	3
ARTH 325	19th-century Art and Architecture in Europe	3
ARTH 330	20th-century Art and Architecture	3
ARTH 333	Modern Architecture	3
ARTH 338	Colonial Art and Architecture of Latin America	3
ARTH 340	Art and Architecture of the United States	3
ARTH 343	Architecture in Richmond	3
ARTH 415	Early Italian Renaissance Art and Architecture	3
ARTH 417	The High Renaissance	3

ARTH 425	Neoclassicism, Romanticism, Realism and Impressionism through Fin-de-Siecle	3
ARTH 426	Neoclassicism, Romanticism, Realism and Impressionism through Fin-de-Siecle	3
ARTH 440	Contemporary Art and Architecture of Africa	3
ARTH 461	Art and Architecture in Latin America, 1915 to the Present	3
ARTH 489	Topics in Advanced Art History <sup>1</sup>	3
ARTH 591	Special Topics in Art History <sup>1</sup>	1-6
<b>Non-Western art history</b>		
ARTH 207	Introduction to Non-Western Art	3
ARTH 245	Survey of Asian Art	3
ARTH 301	Art and Architecture of Ancient North America	3
ARTH 335	Pre-Columbian Art and Architecture	3
ARTH 345	The Art of India	3
ARTH 347	Studies in Asian Art	3
ARTH 350	African and Oceanic Art	3
ARTH 358	African Art and Architecture	3
ARTH 440	Contemporary Art and Architecture of Africa	3
ARTH 449	Studies in Asian Art	3
ARTH 450	Art and Architecture of Mesoamerica	3
ARTH 451	Art and Architecture of Andean America	3
ARTH 452	Studies in Pre-Columbian Art and Architecture	3
ARTH 454	Studies in African and Oceanic Art	3
ARTH 489	Topics in Advanced Art History <sup>1</sup>	3
ARTH 591	Special Topics in Art History <sup>1</sup>	1-6
<b>Capstone</b>		
ARTH 490	Senior Seminar in Art History	3
ARTH 493	Museum Internship	3-6
ARTH 497	Directed Research Project	3

<sup>1</sup> ARTH 489 and ARTH 591 may be counted **only** with department approval in the appropriate category.

## Note: Admission to this program is temporarily suspended.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
ARTH 103	Survey of Art I	3
HIST XXX	(any history course)	3
SPAN, FREN, GRMN or ITAL 101	(or elective if language requirement met)	3-4
UNIV 111	Focused Inquiry I	3

Social/behavioral sciences course (University Core)	3
Term Hours:	15-16

### Spring semester

ARTH 104	Survey of Art II	3
HIST XXX	(any history course)	3
SPAN, FREN, GRMN or ITAL 102	(or elective if language requirement met)	3-4
UNIV 112	Focused Inquiry II	3
Quantitative literacy course (University Core)	3	
Term Hours:	15-16	

### Sophomore year

#### Fall semester

ARTH 2XX	(see department for specific ARTH course requirements)	6
SPAN, FREN, GRMN or ITAL 201	(or elective if language requirement met)	3
UNIV 200	Inquiry and the Craft of Argument	3
Natural/physical sciences course (University Core)	3	
Term Hours:	15	

#### Spring semester

ARTH 2XX or 3XX	(see department for specific ARTH course requirements)	3
ARTH 390	Art Historical Methods	3
HIST XXX	(any history course)	3
SPAN, FREN, GRMN or ITAL 202	(or elective if language requirement met)	3
Humanities/fine arts course (University Core)	3	
Term Hours:	15	

### Junior year

#### Fall semester

ARTH 3XX	(see department for specific ARTH course requirements)	6
ENGL 215	Textual Analysis	3
HIST XXX	(any history course)	3
Fine arts studio (CRAF, SCPT, PAPR or PHTO)	3	
Term Hours:	15	

#### Spring semester

ARTH 3XX	(see department for specific ARTH course requirements)	6
ANTH, RELS, HIST or GEOG	6	
Fine arts studio (CRAF, SCPT, PAPR or PHTO)	3	
Term Hours:	15	

### Senior year

#### Fall semester

ARTH 4XX	(see department for specific ARTH course requirements)	3
ARTH 490	Senior Seminar in Art History	3
or ARTH 493	or Museum Internship	
or ARTH 497	or Directed Research Project	
ANTH, RELS, HIST or GEOG	3	
Elective	3	

Fine arts studio (CRAF, SCPT, PAPR or PHTO)	3
Term Hours:	15
<b>Spring semester</b>	
ARTH 4XX or 5XX (see department for specific ARTH course requirements)	6
Electives	7
Fine arts studio (CRAF, SCPT, PAPR or PHTO)	2
Term Hours:	15
Total Hours:	120-122

## Art History, Bachelor of Arts (B.A.) with a concentration in art historical

The art historical concentration is a liberal arts program composed of an academic course of study exposing the student to the scholarship, theoretical perspectives and research methods of not only the history of art, but related disciplines in the humanities. Courses focus on cultures, historical periods and regions. The program also includes possibilities for directed research projects as well as museum internships. This curriculum provides students the best possible background for future graduate work in art history.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Practice precise and thorough observation
- Write and speak effectively about art and architecture
- Acquire knowledge of key monuments, artists and art movements in the history of art
- Conduct research using art historical methods

### Special requirements

Art history majors must earn a minimum grade of C in each ARTH course to be applied to the curriculum requirements.

## Degree requirements for Art History, Bachelor of Arts (B.A.) with an art historical concentration

### General Education requirements

<b>University Core Education Curriculum</b>		
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

### Additional General Education requirements

ANTH, GEOG, HIST or RELS	9
--------------------------	---

### Collateral requirements

ENGL 215	Textual Analysis	3
Select one of the following:		3

FREN 202	Intermediate French Readings	
ITAL 202	Intermediate Italian Readings	
SPAN 202	Intermediate Spanish Readings	
GRMN 202	Intermediate German II	
HIST XXX (any)		12
HIST 3XX (any)		3
Fine arts studio (CRAF, SCPT, PAPR or PHTO)		6
Total Hours		27

### Major requirements

ARTH 103	Survey of Art I	6
& ARTH 104	and Survey of Art II	
ARTH 390	Art Historical Methods	3
ARTH capstone (select one course from the list below)		3
Emergence of Western tradition (select one course from the list below)		3
Modern and contemporary (select three courses from the list below)		9
Non-Western art history (select two courses from the list below)		6
Renaissance and Baroque (select two courses from the list below)		6
Unrestricted ARTH electives (select any two additional ARTH courses)		6
Total Hours		42

### Open electives

Select 18-21 open elective credits	18-21
------------------------------------	-------

### Total minimum requirement 120 credits

#### Art history course selections

##### Emergence of Western tradition

ARTH 300	Prehistoric and Ancient Art and Architecture	3
ARTH 305	Classical Art and Architecture	3
ARTH 310	Medieval Art and Architecture	3
ARTH 317	History of Architecture	3
ARTH 489	Topics in Advanced Art History <sup>1</sup>	3
ARTH 591	Special Topics in Art History <sup>1</sup>	1-6

##### Renaissance and Baroque

ARTH 315	Renaissance Art and Architecture	3
ARTH 318	History of Architecture	3
ARTH 320	Baroque and Rococo Art and Architecture	3
ARTH 338	Colonial Art and Architecture of Latin America	3
ARTH 415	Early Italian Renaissance Art and Architecture	3
ARTH 417	The High Renaissance	3
ARTH 489	Topics in Advanced Art History <sup>1</sup>	3
ARTH 591	Special Topics in Art History <sup>1</sup>	1-6

##### Modern and contemporary

ARTH 270	History of the Motion Picture I	3
ARTH 271	History of the Motion Picture II	3



ARTH 302	Museums in the 21st Century	3
ARTH 318	History of Architecture	3
ARTH 325	19th-century Art and Architecture in Europe	3
ARTH 330	20th-century Art and Architecture	3
ARTH 333	Modern Architecture	3
ARTH 339	Modern and Contemporary Art and Architecture of Latin America	3
ARTH 340	Art and Architecture of the United States	3
ARTH 342	African-American Art	3
ARTH 343	Architecture in Richmond	3
ARTH 357	Women, Art and Society	3
ARTH 359	Studies in Aesthetics, Theory and Criticism of Art	3
ARTH 365	Modern and Contemporary Art I	3
ARTH 366	Modern and Contemporary Art II	3
ARTH 370	History of Animated Film	3
ARTH 372	History of Photography	3
ARTH 374	Studies in Film	3
ARTH 425	Neoclassicism, Romanticism, Realism and Impressionism through Fin-de-Siecle	3
ARTH 426	Neoclassicism, Romanticism, Realism and Impressionism through Fin-de-Siecle	3
ARTH 430	Modern Painting	3
ARTH 439	Studies in 20th-century Art	3
ARTH 440	Contemporary Art and Architecture of Africa	3
ARTH 444	Studies in the Art of the United States	3
ARTH 461	Art and Architecture in Latin America, 1915 to the Present	3
ARTH 489	Topics in Advanced Art History <sup>1</sup>	3
ARTH 591	Special Topics in Art History <sup>1</sup>	1-6
<b>Non-Western</b>		
ARTH 207	Introduction to Non-Western Art	3
ARTH 245	Survey of Asian Art	3
ARTH 301	Art and Architecture of Ancient North America	3
ARTH 335	Pre-Columbian Art and Architecture	3
ARTH 345	The Art of India	3
ARTH 347	Studies in Asian Art	3
ARTH 350	African and Oceanic Art	3
ARTH 358	African Art and Architecture	3
ARTH 440	Contemporary Art and Architecture of Africa	3
ARTH 449	Studies in Asian Art	3
ARTH 450	Art and Architecture of Mesoamerica	3
ARTH 451	Art and Architecture of Andean America	3
ARTH 452	Studies in Pre-Columbian Art and Architecture	3
ARTH 454	Studies in African and Oceanic Art	3
ARTH 489	Topics in Advanced Art History <sup>1</sup>	3

ARTH 591	Special Topics in Art History <sup>1</sup>	1-6
<b>Capstone</b>		
ARTH 490	Senior Seminar in Art History	3
ARTH 493	Museum Internship	3-6
ARTH 497	Directed Research Project	3

<sup>1</sup> ARTH 489 and ARTH 591 may be counted **only** with department approval in the appropriate category.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

<b>Freshman year</b>		
<b>Fall semester</b>		<b>Hours</b>
ARTH 103	Survey of Art I	3
HIST XXX	(any history course)	3
SPAN, FREN, GRMN or ITAL 101	(or elective if language requirement met)	3-4
UNIV 111	Focused Inquiry I	3
Social/behavioral sciences course (University Core)		3
Term Hours:		15-16
<b>Spring semester</b>		
ARTH 104	Survey of Art II	3
HIST XXX	(any history course)	3
SPAN, FREN, GRMN or ITAL 102	(or elective if language requirement met)	3-4
UNIV 112	Focused Inquiry II	3
Quantitative literacy course (University Core)		3
Term Hours:		15-16
<b>Sophomore year</b>		
<b>Fall semester</b>		
ARTH 2XX	(see below for ARTH course requirements)	6
SPAN, FREN, GRMN or ITAL 201	(or elective if language requirement met)	3
UNIV 200	Inquiry and the Craft of Argument	3
Natural/physical sciences course (University Core)		3
Term Hours:		15
<b>Spring semester</b>		
ARTH 2XX or 3XX	(see below for ARTH course requirements)	3
ARTH 390	Art Historical Methods	3
HIST XXX	(any history course)	3
SPAN, FREN, GRMN or ITAL 202	(or elective if language requirement met)	3
Humanities/fine arts course (University Core)		3
Term Hours:		15
<b>Junior year</b>		
<b>Fall semester</b>		
ARTH 3XX	(see below for ARTH course requirements)	6
ENGL 215	Textual Analysis	3
HIST XXX	(any history course)	3
Fine arts studio (CRAF, SCPT, PAPR or PHTO)		3
Term Hours:		15

**Spring semester**

ARTH 3XX (see department for specific ARTH course requirements)	6
---	---

ANTH, RELS, HIST or GEOG	3
--------------------------	---

HIST 3XX	3
----------	---

Fine arts studio (CRAF, SCPT, PAPR or PHTO)	3
---	---

Term Hours:	15
-------------	----

**Senior year****Fall semester**

ARTH 4XX (see department for specific ARTH course requirements)	3
---	---

ARTH 490 Senior Seminar in Art History	3
--	---

or ARTH or Museum Internship	
------------------------------	--

493 or Directed Research Project	
----------------------------------	--

or ARTH	
---------	--

497	
-----	--

ANTH, RELS, HIST or GEOG	3
--------------------------	---

Electives	6
-----------	---

Term Hours:	15
-------------	----

**Spring semester**

ARTH 4XX or 5XX (see department for specific ARTH course requirements)	6
--	---

ANTH, RELS, HIST or GEOG	3
--------------------------	---

Electives	6
-----------	---

Term Hours:	15
-------------	----

Total Hours:	120-122
--------------	---------

## Art history, minor in

A minor in art history consists of 18 credits, nine of which must be taken at the 300 level.:

ARTH 103	Survey of Art I	3
----------	-----------------	---

ARTH 104	Survey of Art II	3
----------	------------------	---

Twelve credits from any ARTH course at the 200 to 300 level open to non-majors <sup>1</sup>	12
---	----

Total Hours	18
-------------	----

<sup>1</sup> Use the courses tab above to navigate to a list of all ARTH (<http://bulletin.vcu.edu/azcourses/arth>) courses; only one history of film class (ARTH 270, ARTH 271, ARTH 370 or ARTH 374) can be counted toward the art history minor.

Only courses in which a student earns a minimum grade of C may be applied to the minor.

## Department of Communication Arts

**TyRuben Ellingson**

Assistant professor and chair

[arts.vcu.edu/communicationarts](http://arts.vcu.edu/communicationarts)

The Department of Communication Arts' mission is to empower students to create and communicate with insight, vision and voice.

By guiding students to a deeper understanding of past and present artistic practices and methods of visual problem solving, while concurrently fostering a thoughtful awareness of future technologies

and theoretical concerns, the department increases their ability to devise informed design solutions and present them in a refined and professional manner.

The communication arts faculty encourages critical-thinking, discipline and entrepreneurship — abilities critical for success in the fast and ever-changing world in which we live.

## The program

Centered on a rigorous investigation of studio methods and practices, the communication arts curriculum additionally explores historical, conceptual and theoretical concerns critical to the development of a well-rounded and informed understanding of image, media, content and context.

With a history richly rooted in drawing, painting and art theory, the communication arts program is effectively tailored to provide students educational opportunities to develop the types of quality skills and meaningful understandings that are relevant and sought after in the expanding universe of communication medias.

It is a curriculum that endeavors to provide a balance between past, present and future, valuing artistic traditions and techniques, while thoughtfully embracing new tools, technologies, opportunities and outcomes.

Woven throughout the program, the study of communication arts is concerned with the powerful and timeless relationship between art and narrative — image and story — which invites each student to embrace, amplify and build upon their unique views and life experience so that they, in the lifetime beyond university, may add to humanity's ongoing evolution and unfolding.

The communication arts department offers a B.F.A. in Communication Arts as well as a B.F.A. in Communication Arts with a concentration in scientific and preparatory medical illustration.

- Communications Arts, Bachelor of Fine Arts (B.F.A.) (p. 284)
- Communication Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in:
  - Scientific and preparatory medical illustration (p. 286)

## Communication Arts, Bachelor of Fine Arts (B.F.A.)

The sophomore year provides for the advancement of basic creative principles and understandings with courses in drawing, design, typography and figure drawing. The junior year broadens knowledge of design development, photography, sequential imaging and illustration. The processes of working from concept to finished presentation are a focus during this studio course work. Senior students advance their understanding of professional practices, including standards of practice, ethics, contractual and intellectual property guidelines, professional promotional materials and, most importantly, portfolio evolution and refinement guided by personal postgraduate goals.

The junior and senior years offer several opportunities for students to select from a variety of electives within the major. Students typically choose three to five electives in the department. This allows them to begin specializing in and/or more deeply explore personal interests. Currently the elective classes offer specific illustration topics, (i.e., printmaking, advanced figure drawing and editorial illustration) and

entertainment and video game design (i.e., graphic novels, 3D image and movement, entertainment concept design, and organic 3D modeling).

## Learning outcomes

- Students will demonstrate proficiency in drawing, including the figure.
- Students will demonstrate conceptual and critical thinking.
- Students will articulate conceptual and visual ideas to communicate content.
- Students will demonstrate competence in the use of traditional media.
- Students will demonstrate competence in the use of digital media and emerging technologies.
- Students will demonstrate knowledge of the historical and current context of communication arts.
- Students will demonstrate ethical and professional practices.

## Special requirements

A cumulative GPA of 2.5 in the major is expected for continuance in the program.

## Degree requirements for Communication Arts, Bachelor of Fine Arts (B.F.A.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

General education electives <sup>1</sup>	6
Literature	3
Total Hours	9

<sup>1</sup> Select six credits from AFAM, ANTH, BIOL, CHEM, ECON, ENGL, ENVS, FRSC, GSWS, HIST, HUMS, INSC, INTL, MASC, MATH, MGMT, PHIL, PHYS, POLI, PSYC, RELS, SCTS, SOCY, STAT, UNIV or WRLD.

## Collateral requirements

### Art Foundation Program

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	2

### Art history

ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
---------------------	--------------------------------------	---

### Electives

Arts upper-division electives	6
Total Hours	26

## Major requirements

COAR 200	Visual Studies: Drawing	3
COAR 201	Drawing Studies: The Figure Observed	3
COAR 202	Drawing Studies: The Figure in Context	3
COAR 210	Visual Studies: Design	3
COAR 211	Fundamentals of Typography	3
COAR 300	Illustration: Drawing and Painting	3
COAR 320	Concept Drawing	3
COAR 321	Sequential Imaging	3
COAR 331	Photographic Principles in Visual Communications	3
COAR 332 or COAR 432	Digital Drawing 3-D Image and Movement	3
COAR 352	History of Visual Communications I	3
COAR 353	History of Visual Communications II	3
COAR 450	Business of Communication Arts	3
COAR 464	Senior Portfolio	6
COAR upper-division electives		12
Total Hours		57

## Open upper-division electives

Select seven open upper-division electives	7
--	---

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project	1
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I	3
Quantitative literacy course (University Core)		3
Term Hours:		16

### Spring semester

ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	1
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3
Term Hours:		16

### Sophomore year

Fall semester		Hours
COAR 200	Visual Studies: Drawing	3
COAR 201	Drawing Studies: The Figure Observed	3
COAR 211	Fundamentals of Typography	3

COAR 352	History of Visual Communications I	3
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		15
<b>Spring semester</b>		
COAR 202	Drawing Studies: The Figure in Context	3
COAR 210	Visual Studies: Design	3
COAR 353	History of Visual Communications II	3
General Education elective		3
Literature		3
Term Hours:		15
<b>Junior year</b>		
<b>Fall semester</b>		
COAR 300	Illustration: Drawing and Painting	3
COAR 320	Concept Drawing	3
COAR 331	Photographic Principles in Visual Communications	3
COAR 300-level studio elective		3
Natural/physical sciences course (University Core)		3
Term Hours:		15
<b>Spring semester</b>		
COAR 321	Sequential Imaging	3
COAR 332	Digital Drawing	3
or COAR 432	or 3-D Image and Movement	
COAR 300-level studio elective		3
Arts upper-division elective		3
Humanities/fine arts course (University Core)		3
Term Hours:		15
<b>Senior year</b>		
<b>Fall semester</b>		
COAR 450	Business of Communication Arts	3
COAR 300-level studio elective		3
Arts upper-division elective		3
General Education elective		3
Open upper-division elective		3
Term Hours:		15
<b>Spring semester</b>		
COAR 464	Senior Portfolio (capstone)	6
COAR 300-level studio elective		3
Open upper-division elective		4
Term Hours:		13
Total Hours:		120

## Communication Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in scientific and preparatory medical illustration

The instructional program for students in the scientific and preparatory medical illustration concentration differs from the traditional communication arts major beginning in the sophomore year and primarily affects elective studies selections.

The required 32 credits in the biological sciences and chemistry become the student's general studies electives for this major. These courses build the background knowledge necessary to produce images that present complex scientific and medical information clearly and with appropriate fidelity. Students in this concentration must complete 124 credits to graduate.

Within the communication arts course work, requirements differ for this concentration. The courses in typography and visual studies: design and drawing are not required, but scientific illustration is required. There are also some electives in scientific illustration offered.

## Learning outcomes

- Students will demonstrate proficiency in drawing, including the figure.
- Students will demonstrate conceptual and critical thinking.
- Students will articulate conceptual and visual ideas to communicate content.
- Students will demonstrate competence in the use of traditional media.
- Students will demonstrate competence in the use of digital media and emerging technologies.
- Students will demonstrate knowledge of the historical and current context of communication arts.
- Students will demonstrate ethical and professional practices.

## Special requirements

A cumulative GPA of 2.5 in the major is expected for continuance in the program.

## Degree requirements for Communication Arts, Bachelor of Fine Arts (B.F.A.) with a scientific and preparatory medical illustration concentration

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 205	Basic Human Anatomy	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
Total Hours		12

## Collateral requirements

### Art Foundation Program

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	2

### Art history

ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
------------------------	---	---

### Additional requirements

BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 200	Quantitative Biology	3
BIOL 300	Cellular and Molecular Biology	3
BIOL 402	Comparative Vertebrate Anatomy	5
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4

Total Hours 43

## Major requirements

COAR 201	Drawing Studies: The Figure Observed	3
COAR 202	Drawing Studies: The Figure in Context	3
COAR 300	Illustration: Drawing and Painting	3
COAR 320	Concept Drawing	3
COAR 321	Sequential Imaging	3
COAR 331	Photographic Principles in Visual Communications	3
COAR 332	Digital Drawing	3
COAR 341	Scientific Illustration	3
COAR 352	History of Visual Communications I	3
COAR 353	History of Visual Communications II	3
COAR 450	Business of Communication Arts	3
COAR 464	Senior Portfolio	6
COAR upper-level studio classes		9
Total Hours		48

## Total minimum requirement 124 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

#### Fall semester

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project	1
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I	3
Quantitative literacy course (University Core)		3

Term Hours: 16

### Spring semester

ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	1
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3
Term Hours:		16

### Sophomore year

#### Fall semester

COAR 201	Drawing Studies: The Figure Observed	3
COAR 352	History of Visual Communications I	3
COAR 300-level studio elective		3
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
Humanities/fine arts course (University Core)		3
Term Hours:		16

#### Spring semester

BIOL 200	Quantitative Biology	3
COAR 202	Drawing Studies: The Figure in Context	3
COAR 353	History of Visual Communications II	3
UNIV 200	Inquiry and the Craft of Argument	3
Natural/physical sciences course (University Core)		3
Term Hours:		15

### Junior year

#### Fall semester

COAR 300	Illustration: Drawing and Painting	3
COAR 320	Concept Drawing	3
COAR 331	Photographic Principles in Visual Communications	3
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
Term Hours:		13

#### Spring semester

BIOL 205	Basic Human Anatomy	4
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
COAR 332	Digital Drawing	3
COAR 341	Scientific Illustration	3
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
Term Hours:		18

### Senior year

#### Fall semester

BIOL 300	Cellular and Molecular Biology	3
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
COAR 321	Sequential Imaging	3
COAR 450	Business of Communication Arts	3
Term Hours:		13

#### Spring semester



BIOL 402	Comparative Vertebrate Anatomy	5
COAR 464	Senior Portfolio	6
COAR 300-level studio electives		6
Term Hours:		17
Total Hours:		124

## Department of Craft and Material Studies

**Sonya Clark**

Professor and chair

[arts.vcu.edu/craft](http://arts.vcu.edu/craft) (<http://arts.vcu.edu/craft>)

The Department of Craft and Material Studies explores the language of ceramics, glass, wood, fiber and metal. The department offers both a Bachelor of Fine Arts in Craft and Material Studies and a Master of Fine Arts in Fine Arts degree with concentrations in five disciplines: ceramics, fiber, furniture design, glassworking and jewelry/metalworking.

Students are encouraged to learn and explore through the traditional craft media. Together, faculty and students hone, improvise and redefine ancient technologies with new technologies; they bend and blend concepts and materials.

The Department of Craft and Material Studies is housed in a state-of-the-art facility that provides a safe and excellent physical environment in which to work. Students have access to well-equipped studios in each of the five media areas. The department shares the facilities with the departments of Sculpture, Painting and Printmaking, and Kinetic Imaging.

- Craft and Material Studies, Bachelor of Fine Arts (B.F.A.) (p. 288)
- Craft and material studies, minor in (p. 290)

## Craft and Material Studies, Bachelor of Fine Arts (B.F.A.)

The Department of Craft and Material Studies offers a professionally oriented program that leads to a Bachelor of Fine Arts with focus areas in ceramics, fiberwork/fabric design, glassworking, metalsmithing/jewelry or woodworking/furniture design. Within these areas of specialization, courses are designed to assist students in developing concepts, personal direction, and the necessary skills and technical competencies to enable them to pursue a professional career or graduate study. In addition to the areas of study, students have the opportunity for a diverse education in the liberal arts and humanities. Students are encouraged to select courses in other schools in the university that will add to their general knowledge. A student may elect a minor area of study in any department or program offering a minor. The minor can be used to fulfill career objectives or to investigate a discipline of secondary interest.

Career opportunities for craft majors include setting up an independent studio or gallery, restoration or repair work, teaching or participating in the Artist-in-Residence programs in the public schools, and consulting and designing for industry.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. An understanding of aesthetic and multicultural issues: The students will demonstrate an understanding and proficiency in craft, design, art and issues.

2. An understanding of the contemporary field of craft: Students will demonstrate and understand the symbolic relationship and potential impact of contemporary craft and art on culture.
3. Develop and utilize critique skills: The students will be able to use knowledge gained from critique to improve creative work.
4. Technical development and proficiency: The students will demonstrate proficiency of basic, intermediate and advanced craft techniques within their specific field media.
5. Professional practice: The students will demonstrate an understanding of the career demands of a contemporary craft artist, and how to pursue a career through multiple paths.
6. Become skilled maker: Students will be able to develop and articulate their own ideas — conceptual and formal — via conversation, presentation skills and writing.
7. Independent reflection: The students will develop an understanding in their ability to interpret their individual motivation in their artwork and studio practice.

## Special requirements

The Bachelor of Fine Arts in Craft and Material Studies requires a minimum of 120 credits, including 49 in the major. A minimum of 45 of the 120 credits must be 300- and/or 400-level courses. To be admitted into the major, students must successfully complete Art Foundation requirements. Students become affiliated with a major department after the departmental portfolio reviews in the spring semester of the Art Foundation year. At that time the student applies to the department of his or her choice. Department acceptance is competitive and is based on individual student performance and potential in their chosen area. To enroll in an advanced-level craft course, majors must have earned a minimum grade of C in all courses prerequisite for that course.

## Degree requirements for Craft and Material Studies, Bachelor of Fine Arts (B.F.A.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional School of the Arts requirement

ENGL 215	Textual Analysis	3
General Education electives: (Select six credits from approved University Core courses.)		6
Total Hours		9

## Collateral requirements

### Art Foundation requirements

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3

ARTF 139	Project	2
<b>Art History Foundation year requirements</b>		
ARTH 103	Survey of Art I	3
ARTH 104	Survey of Art II	3
<b>ARTH electives</b>		
Select six credit hours from: ARTH 145-ARTH 599		6
<b>ARTH non-Western topic</b>		
Select three credit hours from list below		3
<b>Other arts requirement</b>		
Select four credit hours from PAPR 205-PAPR 491 and/or SCPT 211-SCPT 491		4
Total Hours		33

## Major requirements

CRAF 282	Sophomore Seminar	3
CRAF 382	Junior Seminar	3
CRAF 480	Senior Studio/Critique Course	4
CRAF 482	Senior Seminar (capstone)	3
Basic craft: Select 12 credit hours from list below		12
Advanced craft: Select 24 credit hours from list below		24
Total Hours		49

## Open electives

Select eight open elective credits		8
------------------------------------	--	---

## Total minimum requirement 120 credits

### Electives

#### Art history non-Western

ARTH 207	Introduction to Non-Western Art	3
ARTH 245	Survey of Asian Art	3
ARTH 301	Art and Architecture of Ancient North America	3
ARTH 335	Pre-Columbian Art and Architecture	3
ARTH 342	African-American Art	3
ARTH 345	The Art of India	3
ARTH 347	Studies in Asian Art	3
ARTH 350	African and Oceanic Art	3
ARTH 358	African Art and Architecture	3
ARTH 440	Contemporary Art and Architecture of Africa	3
ARTH 449	Studies in Asian Art	3
ARTH 450	Art and Architecture of Mesoamerica	3
ARTH 451	Art and Architecture of Andean America	3
ARTH 452	Studies in Pre-Columbian Art and Architecture	3
ARTH 454	Studies in African and Oceanic Art	3

#### Basic craft

CRAF 211	Jewelry	4
CRAF 221	Woodworking Techniques	4
CRAF 240	Introduction to Ceramics	4
CRAF 250	Introduction to Glass Fabrication	4
CRAF 251	Introduction to Glassworking	4
CRAF 252	Introduction to Glassworking	4

CRAF 260	Introduction to Textiles	4
CRAF 261	Beginning Textiles	4
CRAF 262	Beginning Textiles	4
<b>Advanced craft</b>		
CRAF 301	Advanced Metal Fabrication: Forming	4
CRAF 302	Advanced Metal Fabrication: Mechanisms	4
CRAF 303	Advanced Metal Fabrication: Surface Techniques	4
CRAF 304	Advanced Metal Fabrication: Casting and Stone Setting	4
CRAF 320	Furniture Design	4
CRAF 321	Advanced Woodworking and Furniture Design	4
CRAF 322	Advanced Woodworking and Furniture Design	4
CRAF 341	Advanced Ceramics	4,6
CRAF 342	Advanced Ceramics	4,6
CRAF 343	The Figure in Clay	4
CRAF 344	Ceramics: Mold-Making	4
CRAF 351	Intermediate Glass Fabrication/Hot	4
CRAF 352	Intermediate Glass Fabrication/Kiln Forming	4
CRAF 353	Glassworking: Lampworking	4
CRAF 354	Intermediate Glass Fabrication	4
CRAF 361	Intermediate Textiles: Tapestry/Weaving	4
CRAF 362	Intermediate Textiles: Pattern Weaving	4
CRAF 363	Fabric Design I	4
CRAF 364	Fabric Design II	4
CRAF 369	Ancient Peruvian Textile Techniques	4
CRAF 401	Advanced Metalsmithing or Jewelry	4,6
CRAF 402	Advanced Metalsmithing or Jewelry	4,6
CRAF 421	Advanced Woodworking and Furniture Design	4,6
CRAF 422	Advanced Woodworking and Furniture Design	4,6
CRAF 441	Advanced Ceramics	4,6
CRAF 442	Advanced Ceramics	4,6
CRAF 446	Glaze Technology	3
CRAF 447	Ceramic Technology: Clay, Claybodies and Slips	3
CRAF 451	Glassworking	4,6
CRAF 452	Glassworking	4,6
CRAF 455	Glass Through Time	3
CRAF 461	Advanced Textile Studio	4,6
CRAF 462	Advanced Textile Studio	4,6
CRAF 463	Advanced Fabric Design	4
CRAF 464	Advanced Fabric Design	4
CRAF 481	Senior Studio/Critique Course	4
CRAF 491	Topics in Craft/Material Studies	1-3
CRAF 492	Independent Study	1-3
CRAF 493	Fieldwork	3
CRAF 494	Fieldwork	6

CRAF 591	Special Topics and Practicum	1-3
----------	------------------------------	-----

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project	1
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I	3
Quantitative literacy course (University Core)		3
Term Hours:		16

#### Spring semester

ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	1
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3
Term Hours:		16

#### Sophomore year

Fall semester		Hours
CRAF 282	Sophomore Seminar	3
UNIV 200	Inquiry and the Craft of Argument	3
PAPR or SCPT (PAPR 205-PAPR 491 or SCPT 211-SCPT 491)		2
Basic craft		4
Humanities/fine arts course (University Core)		3
Term Hours:		15

#### Spring semester

ARTH non-Western topic		3
PAPR or SCPT (PAPR 205-PAPR 491 or SCPT 211-SCPT 491)		1
Basic craft		8
Natural/physical sciences course (University Core)		3
Term Hours:		15

#### Junior year

Fall semester		Hours
CRAF 382	Junior Seminar	3
ENGL 215	Textual Analysis	3
PAPR or SCPT		1
Advanced craft		8
Term Hours:		15

#### Spring semester

ARTH elective (ARTH 145-ARTH 599)		3
Advanced craft		8
General education elective		3
Term Hours:		14

#### Senior year

##### Fall semester

CRAF 482	Senior Seminar (capstone)	3
ARTH elective (ARTH 145-ARTH 599)		3
Advanced craft		4
General education elective		3
Open electives		2
Term Hours:		15

##### Spring semester

CRAF 480	Senior Studio/Critique Course	4
Advanced craft		4
Open electives		6
Term Hours:		14
Total Hours:		120

## Craft and material studies, minor in

Successful completion of the Art Foundation Program is a prerequisite for the minor, which consists of the following:

Select a minimum of nine credits in craft and material studies courses	9
Select a minimum of nine credits in upper-level craft and material studies courses	9
Total Hours	18

## Department of Dance and Choreography

**E. Gaynell Sherrod, Ed.D.**  
Chair

[arts.vcu.edu/dance](http://arts.vcu.edu/dance) (<http://arts.vcu.edu/dance>)

The mission of the Department of Dance and Choreography is to create an environment where the student experiences the demands and challenges of the professional dancer/choreographer. In a community setting where communication, mutual respect and self-motivation are encouraged, classes provide students with disciplined training that will maximize their potential to become dancers of technical excellence, choreographers with original and powerful voices and thinkers with high academic standards.

Students are trained to be performers, choreographers and teachers in this curriculum, which emphasizes modern dance and offers dance courses in modern, improvisation, composition, choreography, music, and dance forms and dance history, as well as ballet, jazz, tap, hip-hop, ballroom, contact improvisation, dance science, anatomy for dancers, video/choreography and teaching methods for dance. Additionally, the program provides a variety of experiences in performance, choreography and production. These offerings enable students to develop as savvy, expressive artists with professional training in dance technique, knowledge of dance philosophies and a foundation in history, enabling them to function as independent and creative artists in the field of dance. VCU Dance is an accredited member of the National Association of Schools of Dance.

- Dance and Choreography, Bachelor of Fine Arts (B.F.A.) (p. 291)
- Dance and Choreography, Bachelor of Fine Arts (B.F.A.) with a concentration in performance/Richmond Ballet (p. 293)
- Dance, minor in (p. 295)

## Dance and Choreography, Bachelor of Fine Arts (B.F.A.)

The Bachelor of Fine Arts in Dance and Choreography requires a total of 120 credits, with 90 of those credits as the major core curriculum. Alongside courses outside of the department, dance-focused academics and creative process-oriented classes (i.e. composition and choreography), dance majors are typically required to take two technique classes daily throughout the majority of their studies. The continuous study of modern dance and ballet is a strong component of the curriculum. In addition to modern dance and ballet, elective courses in jazz, tap, hip hop, improvisation, ballroom and other special topics courses are offered, rounding out a curriculum that also involves studies in kinesiology and anatomy, dance history, music, etc. Within the core there are opportunities for repertory experience and for independent study.

The dance major program is rigorous. Students' technique placement within the required major courses is determined through departmental assessment and placement processes. Formal evaluation procedures include a placement class for entering students, juried examinations at the end of the first semester of the freshman and sophomore years and every semester of the junior and senior years. In the second semester of the freshman and sophomore years the jury is folded into a comprehensive career evaluation called the Freshmen Review and the Sophomore Readmittance Exam, respectively. These career evaluations are to assess each student's progress in relationship to the standards of the program and progress toward degree completion. Students in the major program may be notified of probationary status after the Freshmen Review. All majors must pass the Sophomore Readmittance Exam in order to continue in the major. This exam stands on its own as a separate evaluation from course grades.

The VCU dance program provides abundant opportunities for students to interact with faculty and guest artists in academic, professional, creative and performance contexts. Within the School of the Arts, dance students have frequent opportunities to work collaboratively with other students in the arts. Possibilities include the visual arts, participation in multimedia events and productions outside the dance department. Any dance major can perform in numerous formal concerts, informal showings and lecture-demonstrations produced by the department. Opportunities also are available for training in teaching, but students interested in earning state certification should consult their advisers.

### Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Students should achieve proficiency in improvisation, composition, choreography and related art forms that encourage creativity and an individual point of view.
- Students should become proficient in modern dance and a diverse range of other dance techniques. The objective is to maximize students' potential to become versatile dancers of technical excellence.
- Students need to experience a range of opportunities for performing, presenting original choreography and working behind the scenes in a professionally oriented production or a season of dance events presented to the public.

- Students should gain a global and historical perspective of dance as an art form with an emphasis on contemporary approaches to dance making and performance.
- Students need to develop writing and critical-thinking skills.

### Special requirements

An audition is required for acceptance into the dance program. Applicants must follow the admissions guidelines for arts students as described in the "Admission to the university" section of the bulletin.

To be eligible for graduation, dance majors must meet the proficiency requirements of having completed two semesters of level IV technique (DANC 401-DANC 402) or achieved an equivalent through departmentally approved summer study. In order to graduate, students must also complete a senior project, which is a practical presentation in both performance and choreography. Senior projects are approved in multiple stages by a review committee composed of full-time faculty members. Eligibility is based on the student's overall academic record (credits earned, requirements met). Approval in stage one is based on the quality of the student's written proposal; in stage two it is based upon evaluation/review of the student's completed project proposed for presentation.

## Degree requirements for Dance and Choreography, Bachelor of Fine Arts (B.F.A.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

DANC 103	Survey of Dance History (ballet)	3
DANC 104	Survey of Dance History (modern dance)	3
DANC 313 or DANC 413	Dance in World Cultures African American Presence in American Dance, Performance and Social Contexts	3
Total Hours		9

### Major requirements

DANC 101 & DANC 102	Modern Dance Technique I and Workshop and Modern Dance Technique I and Workshop	6
DANC 105	Improvisation	2
DANC 107	Music and Dance Forms	2
DANC 111 & DANC 112	Ballet Technique I and Ballet Technique I	4
DANC 162	Rehearsal and Performance	2

DANC 201 & DANC 202	Modern Dance Technique II and Workshop and Modern Dance Technique II and Workshop	6
DANC 205 & DANC 206	Composition and Composition	6
DANC 207	Studies in Music for Dance	3
DANC 211 & DANC 212	Ballet Technique II and Ballet Technique II	4
DANC 260	Dance Production Workshop	2
DANC 301 & DANC 302	Modern Dance Technique III and Workshop and Modern Dance Technique III and Workshop	6
DANC 303 & DANC 304	Choreography/Performance and Choreography/Performance	6
DANC 311 & DANC 312	Ballet Technique III and Ballet Technique III	4
DANC 317	Anatomy for the Dancer	1
DANC 318	Dance Science	3
DANC 401 & DANC 402	Modern Dance Technique IV and Workshop and Modern Dance Technique IV and Workshop	6
DANC 407	Teaching Methods for Dance	3
DANC 411	Ballet Technique IV	2
DANC 490	Senior Project (capstone)	3
DANZ 111	Ballet Technique I Laboratory	1
DANZ 112	Ballet Technique I Laboratory	1
DANZ 211	Ballet Technique II Laboratory	1
DANZ 212	Ballet Technique II Laboratory	1
Technique elective (see list below)		3
Dance career elective (see list below)		3
Total Hours		81

## Open electives

Select nine open elective credits 9

## Total minimum requirement 120 credits

### Electives

#### Technique electives

DANC/AFAM 121	Tap Technique I	2
DANC/AFAM 122	Tap Technique I	2
DANC 126 & DANC 127	African-Caribbean Dance I and African-Caribbean Dance I	4
DANC 141	Ballroom Dancing	1
DANC 142	Ballroom Dancing	1
DANC 191	West African Dance Techniques	2
DANC 213	Beginning/Intermediate Pointe	1
DANC 251	Jazz Technique II	2
DANC 253	Pilates	1-2
DANC 254	Yoga	1-3
DANC 255	Hip Hop Dance	2
DANC 256	Hip Hop Dance	2
DANC 315	Contact Improvisation	2

DANC 321	Partnering	2
----------	------------	---

#### Approved topics courses

#### Dance career electives

DANC 319	Video/Choreography Workshop	3
DANC 320	Video/Choreography Workshop	3
DANC 360	Lighting Design for Dance	3
DANC 460	Business of Dance	2

#### Approved topics courses such as dance management

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
DANC 101	Modern Dance Technique I and Workshop	3
DANC 103	Survey of Dance History (gen ed)	3
DANC 105	Improvisation	2
DANC 111 & DANZ 111	Ballet Technique I and Ballet Technique I Laboratory	3
UNIV 111	Focused Inquiry I	3
Quantitative literacy course (University Core)		3
Term Hours:		17

### Spring semester

DANC 102	Modern Dance Technique I and Workshop	3
DANC 104	Survey of Dance History (gen ed)	3
DANC 107	Music and Dance Forms	2
DANC 112 & DANZ 112	Ballet Technique I and Ballet Technique I Laboratory	3
DANC 162	Rehearsal and Performance	2
UNIV 112	Focused Inquiry II	3
Term Hours:		16

### Sophomore year

#### Fall semester

DANC 201	Modern Dance Technique II and Workshop	3
DANC 205	Composition	3
DANC 207	Studies in Music for Dance	3
DANC 211 & DANZ 211	Ballet Technique II and Ballet Technique II Laboratory	3
DANC 260	Dance Production Workshop	2
Technique elective		1
Term Hours:		15

#### Spring semester

DANC 202	Modern Dance Technique II and Workshop	3
DANC 206	Composition	3
DANC 212 & DANZ 212	Ballet Technique II and Ballet Technique II Laboratory	3
UNIV 200	Inquiry and the Craft of Argument	3
Natural/physical sciences course (University Core)		3
Term Hours:		15

### Junior year

#### Fall semester

DANC 301	Modern Dance Technique III and Workshop	3
DANC 303	Choreography/Performance	3



DANC 311	Ballet Technique III	2
DANC 317	Anatomy for the Dancer	1
Humanities/fine arts course (University Core)		3
Social/behavioral sciences course (University Core)		3

Term Hours: 15

#### Spring semester

DANC 302	Modern Dance Technique III and Workshop	3
DANC 304	Choreography/Performance	3
DANC 312	Ballet Technique III	2
DANC 313	Dance in World Cultures	3
or DANC 413	or African American Presence in American Dance, Performance and Social Contexts	
DANC 318	Dance Science	3
Technique elective		2

Term Hours: 16

#### Senior year

##### Fall semester

DANC 401	Modern Dance Technique IV and Workshop	3
DANC 407	Teaching Methods for Dance	3
DANC 411	Ballet Technique IV	2
Dance career elective		3
Open electives		3
Term Hours:		14

##### Spring semester

DANC 402	Modern Dance Technique IV and Workshop	3
DANC 490	Senior Project (capstone)	3
Open electives		6
Term Hours:		12
Total Hours:		120

## Dance and Choreography, Bachelor of Fine Arts (B.F.A.) with a concentration in performance/Richmond Ballet

VCU's Department of Dance and Choreography offers a four-year degree concentration within the B.F.A. specifically designed for Richmond Ballet trainees. This unique program bridges trainee experience with the Richmond Ballet professional company and rigorous pre-professional training with a focus in modern/contemporary dance. During the first two years, students receive VCU credit for their work at the Richmond Ballet while taking general education courses, dance history and improvisation at VCU. Students then complete the degree with two years at VCU, taking courses in modern/contemporary dance, ballet, composition, dance science, teaching methods and more. There are many opportunities to perform throughout the four years. This B.F.A. program is designed for disciplined students who are interested in attaining versatility in both ballet and modern/contemporary dance while exploring creative, historical and global perspectives of the field.

A very small number of students in this degree program are offered the opportunity to join Richmond Ballet II after their first two years. Students are encouraged to discuss professional and academic plans with their advisers should this occur.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students must demonstrate proficiency in improvisation, composition, choreography and related art forms that encourage creativity and an individual point of view.
- Students must demonstrate proficiency in modern dance and a diverse range of other dance techniques. The objective is to maximize students' potential to become versatile dancers of technical excellence.
- Students must demonstrate a global and historical perspective of dance as an art form with an emphasis on contemporary approaches to dance making and performance.
- Students must demonstrate writing and critical-thinking skills.
- Students must demonstrate comprehensive and theoretical understanding of the field.

## Special requirements

An audition is required for acceptance into the dance program. Applicants must follow the admissions guidelines for arts students as described in the "Admission to the university" section of the bulletin.

The two-year trainee program of the Richmond Ballet provides intensive study and opportunities to perform in concert with the Richmond Ballet Company. Within this concentration, Richmond Ballet trainees enroll as full-time VCU dance majors when they enroll in the Richmond Ballet Trainee Program. Students must pass auditions for both programs and meet VCU academic requirements for admission.

Students in the performance/Richmond Ballet concentration must pay tuition for both the VCU and the Richmond Ballet Trainee programs.

## Technique proficiency standard

All dance majors in the Richmond Ballet Trainee BFA must complete ballet technique to the level DANC 412 and modern technique to the DANC 302 level (or an equivalent approved by the chair and full-time faculty) to be eligible for graduation.

## Senior project

In order to graduate, students must also complete DANC 490, which is a practical presentation in performance. A review committee, composed of full-time faculty members, approves senior projects in multiple stages. Eligibility is based on the student's overall academic record (credits earned, requirements met). Approval in stage one is based on the quality of the student's written proposal; in stage two it is based upon evaluation/review of the student's completed project proposed for presentation.

## Degree requirements for Dance and Choreography, Bachelor of Fine Arts (B.F.A.) with a concentration in performance/Richmond Ballet

### General Education requirement

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3

UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

**Additional General Education requirements**

DANC 103 & DANC 104	Survey of Dance History and Survey of Dance History	6
DANC 313 or DANC 413	Dance in World Cultures African American Presence in American Dance, Performance and Social Contexts	3
Total Hours		9

**Major requirements**

DANC 105	Improvisation	2
DANC 201 & DANC 202	Modern Dance Technique II and Workshop and Modern Dance Technique II and Workshop	6
DANC 207	Studies in Music for Dance	3
DANC 260	Dance Production Workshop	2
DANC 293 & DANC 294	Professional Performance: Trainee Level First Year and Professional Performance: Trainee Level First Year	14
DANC 301 & DANC 302	Modern Dance Technique III and Workshop and Modern Dance Technique III and Workshop	6
DANC 307	Music and Dance Forms for Trainees	2
DANC 317	Anatomy for the Dancer	1
DANC 318	Dance Science	3
DANC 393 & DANC 394	Professional Performance: Trainee Level Second Year and Professional Performance: Trainee Level Second Year	16
DANC 405 & DANC 406	Composition for Trainees and Composition for Trainees	6
DANC 407	Teaching Methods for Dance	3
DANC 411 & DANC 411	Ballet Technique IV and Ballet Technique IV Laboratory	3
DANC 411 & DANC 411	Ballet Technique IV and Ballet Technique IV Laboratory	3
DANC 412 & DANC 412	Ballet Technique IV and Ballet Technique IV Laboratory	3
DANC 412 & DANC 412	Ballet Technique IV and Ballet Technique IV Laboratory	3
DANC 490	Senior Project (capstone)	3
Dance electives		5
Total Hours		84

**Open electives**

Select six open elective credits 6

**Total minimum requirement 120 credits****Electives**

Recommended dance electives include:

DANC/AFAM 121	Tap Technique I	2
DANC/AFAM 122	Tap Technique I	2
DANC 126 & DANC 127	African-Caribbean Dance I and African-Caribbean Dance I	4
DANC 141	Ballroom Dancing	1
DANC 142	Ballroom Dancing	1
DANC 191	West African Dance Techniques	2
DANC 213	Beginning/Intermediate Pointe	1
DANC 251	Jazz Technique II	2
DANC 253	Pilates	1-2
DANC 254	Yoga	1-3
DANC 255	Hip Hop Dance	2
DANC 256	Hip Hop Dance	2
DANC 261	Rehearsal and Performance	1-3
DANC 262	Rehearsal and Performance	1-3
DANC 315	Contact Improvisation	2
DANC 319	Video/Choreography Workshop	3
DANC 320	Video/Choreography Workshop	3
DANC 321	Partnering	2
DANC 360	Lighting Design for Dance	3
DANC 361	Rehearsal and Performance	1-3
DANC 362	Rehearsal and Performance	1-3
DANC 371	Repertory	3
DANC 372	Repertory	3
DANC 460	Business of Dance	2

Approved topics courses

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Freshman year**

Fall semester		Hours
DANC 103	Survey of Dance History (gen ed)	3
DANC 105	Improvisation	2
DANC 293	Professional Performance: Trainee Level First Year	7
UNIV 111	Focused Inquiry I	3
Term Hours:		15

**Spring semester**

DANC 104	Survey of Dance History (gen ed)	3
DANC 294	Professional Performance: Trainee Level First Year	7
UNIV 112	Focused Inquiry II	3
Quantitative literacy course (University Core; MATH 131 suggested)		3
Term Hours:		16

**Sophomore year****Fall semester**

DANC 393	Professional Performance: Trainee Level Second Year	8
UNIV 200	Inquiry and the Craft of Argument	3
Natural/physical sciences course (University Core)		3
Term Hours:		14

**Spring semester**

DANC 394	Professional Performance: Trainee Level Second Year	8
Dance elective		2
Humanities/fine arts course (University Core)		3
Social/behavioral sciences course (University Core)		3
Term Hours:		16

**Junior year****Fall semester**

DANC 201	Modern Dance Technique II and Workshop	3
DANC 207	Studies in Music for Dance	3
DANC 260	Dance Production Workshop	2
DANC 313 or DANC 413	Dance in World Cultures or African American Presence in American Dance, Performance and Social Contexts	3
DANC 317	Anatomy for the Dancer	1
DANC 411	Ballet Technique IV	2
DANZ 411	Ballet Technique IV Laboratory	1
Term Hours:		15

**Spring semester**

DANC 202	Modern Dance Technique II and Workshop	3
DANC 307	Music and Dance Forms for Trainees	2
DANC 318	Dance Science	3
DANC 412	Ballet Technique IV	2
DANZ 412	Ballet Technique IV Laboratory	1
Open elective		3
Term Hours:		14

**Senior year****Fall semester**

DANC 301 or DANC 401	Modern Dance Technique III and Workshop or Modern Dance Technique IV and Workshop	3
DANC 405	Composition for Trainees	3
DANC 407	Teaching Methods for Dance	3
DANC 411	Ballet Technique IV	2
DANZ 411	Ballet Technique IV Laboratory	1
DANC elective		3
Term Hours:		15

**Spring**

DANC 302 or DANC 402	Modern Dance Technique III and Workshop or Modern Dance Technique IV and Workshop	3
DANC 406	Composition for Trainees	3
DANC 412	Ballet Technique IV	2
DANZ 412	Ballet Technique IV Laboratory	1
DANC 490	Senior Project (capstone)	3

Open elective	3
Term Hours:	15
Total Hours:	120

## Dance, minor in

Students can begin accruing credit hours toward a dance minor at any time. Requests for the minor can be made only after the student has earned a minimum of eight credits in dance at VCU, with a minimum overall GPA of 3.0. (Transfer credits are not accepted toward the minor.) Minor requests are to be submitted to the dance minor adviser and approved by the department chair. The minor consists of a total of 25 credits. Students wishing to minor in dance should expect that not all classes are offered each term. Also, most classes for the minor are designated "non-major," which generally means they are open to the university population and fill quickly.

No audition is required for the dance minor.

**Dance technique**

Select 14 credits from the following:		14
DANC 121	Tap Technique I	
DANC 122	Tap Technique I	
DANC 126	African-Caribbean Dance I	
DANC 127	African-Caribbean Dance I	
DANC 133	Introduction to Ballet Technique I	
DANC 134	Introduction to Ballet Technique II	
DANC 141	Ballroom Dancing	
DANC 142	Ballroom Dancing	
DANC 183	Introduction to Modern Dance Technique	
DANC 184	Introduction to Modern Dance Technique	
DANC 191	West African Dance Techniques	
DANC 221	Tap Technique II	
DANC 222	Tap Technique II	
DANC 253	Pilates	
DANC 254	Yoga	
DANC 255	Hip Hop Dance	
DANC 256	Hip Hop Dance	

**Improvisation**

Select two credits from the following:		2
DANC 105	Improvisation	
DANC 106	Improvisation	
DANC 315	Contact Improvisation	
DANC 316	Contact Improvisation	

**Dance history**

Select six credits from the following:		6
DANC 103	Survey of Dance History	
DANC 104	Survey of Dance History	
DANC 313	Dance in World Cultures	

**Dance elective**

Select three credits from the following:		3
DANC 319	Video/Choreography Workshop	
DANC 320	Video/Choreography Workshop	

DANC 360	Lighting Design for Dance
DANC 460	Business of Dance
Approved topics courses (such as intro to composition)	
Total Hours	25

## Department of Fashion Design and Merchandising

**Patricia Brown**

Associate professor and chair

[arts.vcu.edu/fashion](http://arts.vcu.edu/fashion) (<http://arts.vcu.edu/fashion>)

The Department of Fashion Design and Merchandising offers two programs. The fashion design concentration leads to a Bachelor of Fine Arts degree and the fashion merchandising concentration leads to a Bachelor of Arts degree.

Both concentrations are extremely time-consuming. Students are expected to put class attendance and study time above other campus activities or employment.

All students are required to have a laptop computer. The department can provide specifications.

Students must take classes in the sequence prescribed by the department and adhere to all prerequisites. Failure to comply can lengthen the number of semesters necessary for completion of degree requirements.

Internships provide not only experience but industry contacts, and are strongly recommended. They may be conducted primarily during the summer semester.

- Fashion, Bachelor of Arts (B.A.) with a concentration in fashion merchandising (p. 296)
- Fashion, Bachelor of Fine Arts (B.F.A.) with a concentration in fashion design (p. 298)

## Fashion, Bachelor of Arts (B.A.) with a concentration in fashion merchandising

The major in fashion merchandising requires a strong background in marketing, business and specialized professional courses with an emphasis on globalism. Students are directed toward assignments that will develop their skills in research, writing, presentation and critical thinking. Graduates find career opportunities in fashion forecasting, product development, advertising and promotion, retail management, buying, and international marketing.

Internships provide not only experience but industry contacts, and are strongly recommended. They may be conducted primarily during the summer semester.

Study abroad programs are readily available for fashion merchandising majors.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Implement technical skills: The program will provide students with technical knowledge and skills of contemporary computer software.
2. Utilize problem-solving: Apply quantitative and qualitative skills to problem-solving within the apparel industry. Students will be familiar with the various levels of the fashion industry, and understand how the different business levels and segments intersect. Students will have knowledge of numerous occupations in the fashion industry.
3. Understand the fashion industry and its occupations: Students will understand the workings of the wholesale segment of the fashion industry including market segmentation, buyer behavior and career opportunities. Numerous simulations and outside evaluators will be used.
4. Understand the wholesale industry: Students will understand how theoretical perspectives on markets, trade and economic development can be applied to historical and current data on production, consumption and trade.
5. Understand global economics: Students will understand how theoretical perspectives on markets, trade and economic development can be applied to historical and current data on production, consumption and trade.
6. Application of the design principles: Students will successfully apply the elements and principles of design to various fashion-related projects and presentations.
7. Knowledge of the theory of contemporary fashion: Students will be aware of the historical significance of fashion in contemporary history.
8. Application of merchandising math: Students will demonstrate understanding of the fashion buyer's job with regard to merchandise planning and control.

## Degree requirements for Fashion, Bachelor of Arts (B.A.) with a concentration in fashion merchandising

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### General Education directed electives

Select nine General Education directed elective credits <sup>1</sup>		9
Total Hours		9

<sup>1</sup> Directed electives are VCU "general education" electives.

### Collateral requirements

ACCT 202	Accounting for Non-business Majors	3
ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
INFO 162	Digital Literacy: Spreadsheets Skills I	1

MKTG 301	Marketing Principles	3
MKTG 315	Buyer Behavior	3
MKTG/INTL 320	International Marketing	3
MKTG 330	Integrated Marketing Communications	3
MKTG 340	Retail Management	3
SCMA 323	Legal Environment of Business	3
Art history elective		3
Total Hours		31

## Major courses

FASH 145	Computers for Fashion I	3
FASH 240	Survey of the Fashion Industry I	3
FASH 241	Survey of the Fashion Industry II	3
FASH 250	Concepts of Fashion Merchandising Environment	3
FASH 290	Textiles for the Fashion Industry	3
FASH 319	Contemporary Fashion	3
FASH 341	Merchandise Planning and Control	3
FASH 342	Retail Buying Simulation	3
FASH 343	Fashion Forecasting	3
FASH 380	Fashion Branding	3
FASH 443	Supervision and Management	3
FASH 445	Fashion Entrepreneurship (capstone course)	3
FASH 450	Line Development	3
FASH 451	Importing and Exporting Fashion	3
FASH 490	Fashion Seminar	1
<b>Fashion elective</b>		
FASH 210	Visual Merchandising	3
or FASH 350	Fashion Promotion	
Total Hours		46

## Open electives

Select 13 open elective credits <sup>1</sup> 13

<sup>1</sup> Open electives are any courses from any department within the university.

## Total minimum requirement 120 credits

Note: Internships are not required but are strongly recommended. FASH 493 may range from one to six credits.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
ARTH 103	Survey of Art I	3
FASH 145	Computers for Fashion I	3
FASH 240	Survey of the Fashion Industry I	3
UNIV 111	Focused Inquiry I	3
Approved social/behavioral science (University Core)		3-4
Term Hours:		15-16

### Spring semester

ARTH 104	Survey of Art II	3
FASH 241	Survey of the Fashion Industry II	3
UNIV 112	Focused Inquiry II	3
Approved natural/physical science (University Core)		3
Approved quantitative literacy (University Core)		3
Term Hours:		15

### Sophomore year

Fall semester		
ACCT 202	Accounting for Non-business Majors	3
FASH 250	Concepts of Fashion Merchandising Environment	3
Approved humanities/fine arts (University Core)		3
Art history elective		3
Open elective <sup>1</sup>		3
Term Hours:		15

### Spring semester

FASH 290	Textiles for the Fashion Industry	3
FASH 343	Fashion Forecasting	3
INFO 162	Digital Literacy: Spreadsheets Skills I	1
UNIV 200	Inquiry and the Craft of Argument	3
Directed electives <sup>2</sup>		6
Term Hours:		16

### Junior year

Fall semester		
FASH 319	Contemporary Fashion	3
FASH 341	Merchandise Planning and Control	3
FASH 380	Fashion Branding	3
MKTG 301	Marketing Principles	3
FASH elective (select from):		
FASH 210	Visual Merchandising	3
or FASH 350	or Fashion Promotion	
Term Hours:		15

### Spring semester

FASH 342	Retail Buying Simulation	3
MKTG 330	Integrated Marketing Communications	3
SCMA 323	Legal Environment of Business	3
Directed elective <sup>2</sup>		3
Open elective <sup>1</sup>		3
Term Hours:		15

### Senior year

Fall semester		
FASH 443	Supervision and Management	3
FASH 450	Line Development	3
MKTG 315	Buyer Behavior	3
MKTG 340	Retail Management	3
Open elective <sup>1</sup>		3
Term Hours:		15

### Spring semester

FASH 445	Fashion Entrepreneurship (capstone)	3
FASH 451	Importing and Exporting Fashion	3
FASH 490	Fashion Seminar	1



MKTG 320 or INTL 320	International Marketing or International Marketing	3
Open electives <sup>1</sup>		4
Term Hours:		14
Total Hours:		120-121

<sup>1</sup> Open electives are any courses from any department within the university.

<sup>2</sup> Directed electives are VCU "general education" electives.

Note: Internships are not required but are strongly recommended. FASH 493 may range from one to six credits.

## Fashion, Bachelor of Fine Arts (B.F.A.) with a concentration in fashion design

The fashion design curriculum offers technical and design courses that provide skills required in the fashion industry. Individual designs are presented in two-dimensional form, developed and perfected through techniques used in the fashion industry, and then executed in final and three-dimensional form in fabrics appropriate to the design. Junior design students are encouraged to complete internships in the fashion industry in New York City. Internships provide not only experience but industry contacts, and are strongly recommended. They may be conducted primarily during the summer semester.

Study abroad programs are readily available for fashion design majors.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Utilize problem-solving skills: Apply investigative and research skills in the completion of studio projects
2. Implement industry-standard computer technology
3. Demonstrate professional visual and oral presentation skills
4. Understand the global nature of the fashion industry

### Special requirements

Sophomores are required to purchase departmentally approved dress forms.

## Degree requirements for Fashion, Bachelor of Fine Arts (B.F.A.) with a concentration in fashion design

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4

Approved social/behavioral sciences	3-4
Total Hours	21-24

### Additional General Education requirements

English literature or foreign language	3
General education electives from the College of Humanities and Sciences	6
Total Hours	9

### Collateral requirements

#### Art Foundation Program

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	2

#### Art History

ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Art history elective		3
Total Hours		23

### Major requirements

FASH 201	Construction Techniques	3
FASH 202	Draping	3
FASH 203 & FASH 204	Patternmaking and Patternmaking	6
FASH 205 & FASH 206	Fashion Drawing I and Fashion Drawing I	6
FASH 290	Textiles for the Fashion Industry	3
Take two sections of the following:		6
FASH 301	Design I Studio	
Take two sections of the following:		6
FASH 302	Design I Studio	
FASH 319	Contemporary Fashion	3
FASH 345	Computers for Fashion Design: Adobe Photoshop and Illustrator	3
Take two sections of the following:		6
FASH 401	Design II Studio	
Take two sections of the following:		6
FASH 402	Design II Studio	
Take two sections of the following:		6
FASH 403	Design Theory and Illustration I	
FASH 404	Design Theory and Illustration II (portfolio)	3
FASH 490	Fashion Seminar	1
Total Hours		61

### Open electives

Select six open elective credits at the 300 level or higher	6
---	---

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester			Hours
ARTF 131	Drawing Studio		3
ARTF 132	Surface Research		3
ARTF 139	Project		1
ARTH 103	Survey of Art I		3
UNIV 111	Focused Inquiry I		3
Approved quantitative literacy (University Core)			3
Term Hours:			16

### Spring semester

ARTF 133	Space Research		3
ARTF 134	Time Studio		3
ARTF 139	Project		1
ARTH 104	Survey of Art II		3
UNIV 112	Focused Inquiry II		3
Social/behavioral sciences course (University Core)			3
Term Hours:			16

### Sophomore year

Fall semester			Hours
FASH 201	Construction Techniques		3
FASH 203	Patternmaking		3
FASH 205	Fashion Drawing I		3
FASH 290	Textiles for the Fashion Industry		3
Approved humanities/fine arts (University Core)			3
Term Hours:			15

### Spring semester

FASH 202	Draping		3
FASH 204	Patternmaking		3
FASH 206	Fashion Drawing I		3
FASH 345	Computers for Fashion Design: Adobe Photoshop and Illustrator		3
UNIV 200	Inquiry and the Craft of Argument		3
Term Hours:			15

### Junior year

Fall semester			Hours
FASH 301	Design I Studio		3
FASH 301	Design I Studio		3
FASH 319	Contemporary Fashion		3
FASH 403	Design Theory and Illustration I		3
Natural/physical sciences course (University Core)			3
Term Hours:			15

### Spring semester

FASH 302	Design I Studio		3
FASH 302	Design I Studio		3
FASH 403	Design Theory and Illustration I		3
General education elective			3
Literature or foreign language			3
Term Hours:			15

### Senior year

### Fall semester

FASH 401	Design II Studio		3
FASH 401	Design II Studio		3
FASH 404	Design Theory and Illustration II (portfolio)		3
Art history elective			3
Open elective			3
Term Hours:			15

### Spring semester

FASH 402	Design II Studio		3
FASH 402	Design II Studio		3
FASH 490	Fashion Seminar		1
General education elective			3
Open elective			3
Term Hours:			13
Total Hours:			120

## Department of Graphic Design

### David Shields

Associate professor and chair

[arts.vcu.edu/graphicdesign](http://arts.vcu.edu/graphicdesign) (<http://arts.vcu.edu/graphicdesign>)

Graphic design is a creative and analytical process that integrates art and technology to communicate ideas and information. The goal of the Department of Graphic Design at VCU is to educate students to become innovators and leaders in three related areas of professional practice: print design, sequential design and interaction design.

## Mission statement

The Department of Graphic Design encourages the exploration of diverse problem-solving methodologies, innovative investigations and creative research in all forms of communication. It is dedicated to excellence in teaching, scholarship, academic and creative research and professional practice. The Department of Graphic Design provides both an undergraduate and graduate education stressing creative and intellectual thinking; awareness of individual, social, cultural and communicative issues; the integration of new technology; and a concern for ethical implications and the natural environment. The program actively contributes to the university, local, state, national and international communities through its scholarly and creative activities, educational programs and service efforts.

- Graphic Design, Bachelor of Fine Arts (B.F.A.) (p. 299)

## Graphic Design, Bachelor of Fine Arts (B.F.A.)

### Admission and standards of graphic design

Students who have successfully completed the Art Foundation Program may apply for admission into the graphic design B.F.A. program. Due to the sequence of the required graphic design courses, students are admitted only in the fall semester. All applicants must submit a portfolio of work. The Department of Graphic Design uses the portfolio evaluation criteria established in the School of the Arts for initial acceptance.

Students who wish to transfer into the Graphic Design Program must first apply to the Art Foundation Program for evaluation. A transfer

student who has successfully completed the Art Foundation Program must demonstrate equivalent preparation at another institution and submit a portfolio of work for review by graphic design faculty. Transfer students admitted into the graphic design program must complete all major requirements determined to be missing from their academic design experience. Transfer students should expect to spend at least five semesters in the graphic design program in order to qualify for a B.F.A.

1. Students must complete the required pre- and corequisites of the graphic design program in the order presented in the curriculum outline. This structure enables students to develop knowledge and skills based in graphic design that will prepare them for upper-level studio courses and successful entry into the graphic design profession.
2. Students are required to meet regularly with the department undergraduate adviser each semester on scheduled advising dates to make sure they are completing courses as required and are preparing for the portfolio reviews as needed.
3. Students must earn a minimum cumulative GPA of 2.5 to be accepted to the graphic design program. Once accepted, students must maintain a minimum 2.5 GPA in GDES courses to continue in the program.
4. A portfolio review of graphic design studio work takes place at the end of the sophomore year. The student's portfolio, GPA and individual course evaluations are evaluated during this review to determine if the student may continue in the program. Additionally, the following courses must be completed at the end of the sophomore year to be eligible for continuation in the program:

GDES 202	Design Technology	3
GDES 205	Design Methods and Processes	3
GDES 211	Typography I	3
GDES 212	Design Form and Communication	3,6
GDES 213	Typography II	3
GDES 214	Imaging I	3
GDES 216	Imaging II	3
GDES 252	History of Visual Communication	3

5. A second portfolio review of graphic design studio work takes place at the end of the junior year. The student's portfolio, GPA and individual course evaluations are evaluated during this review to determine if the student may continue in the graphic design program.
6. Students are required to have a laptop computer and appropriate software upon initial entry into the graphic design program. Students will receive the specific technology requirements upon acceptance into the program. Students have an option to purchase a computer package at an academic discount or lease the same equipment through the School of the Arts Computer Center.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- **Utilize forms of communication:** With a sense of aesthetics, personal and professional integrity, and message clarity, students will utilize visual and verbal forms of communication to convey ideas and information.
- **Address needs of client and audience:** Students will demonstrate an understanding of their responsibility to client and audience – determining needs, structuring problems and solving problems creatively.

- **Focus on ethics:** Students will solve communication problems with a focus on their positive ethical impact upon culture and society.
- **Embrace technology as a vehicle of communication:** Students will demonstrate the ability to use new and emerging technology as a vehicle of effective communication and a means for the invention of expressive form.
- **Practice design as a dynamic process:** Students will understand and practice design as a process that relies upon intuition, reason, ideation methods and effective research for the creation of appropriate and inventive solutions.

## Special requirements

Once accepted, students must maintain a minimum 2.5 GPA in GDES courses to continue in the program. Student GDES course work GPA is monitored at the end of fall and spring semesters. A student with GDES course work GPA that falls below 2.5 by the end of any semester is placed on departmental probation for the next semester. Students placed on GDES GPA probation must bring their GDES course work GPA to a minimum of 2.5 by the end of the following semester. Students failing to bring their GDES course work GPA to a minimum of 2.5 by the end of that semester are no longer permitted to continue in the program.

## Degree requirements for Bachelor of Fine Arts, Graphic Design (B.F.A.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

General Education electives	9
Total Hours	9

## Collateral requirements

#### Art Foundation Program

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	2

#### Art history

ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Total Hours		20

## Major requirements

GDES 202	Design Technology	3
GDES 205	Design Methods and Processes	3
GDES 211	Typography I	3

GDES 212	Design Form and Communication	3
GDES 213	Typography II	3
GDES 214	Imaging I	3
GDES 216	Imaging II	3
GDES 252	History of Visual Communication	3
GDES 253	Theory and Philosophy of Visual Communication	3
GDES 343	Systems in Design	3
GDES 345	Print I	3
GDES 346	Visual Narrative I	3
GDES 347	Interaction I	3
GDES 365	Print II	3
GDES 367	Interaction II	3
GDES 470	Senior Seminar	3
GDES 472	Senior Studio (capstone)	3
Total Hours		51

## GDES electives

Select 12 GDES elective credits at the 300- to 500-level 12

## Open electives

Select nine open elective credits 9

## Total minimum requirement 122 credits

### Electives

GDES 300	Creative Strategies	3
GDES 301	Beginning Letterpress	3
GDES 302	Book Arts	3
GDES 308	Web Design	3
GDES 356	Studio Management	3
GDES 366	Visual Narrative II	3
GDES 391	Lecture Topics in Design	1-3
GDES 392	Research/Individual Study	2-4
GDES 401	Advanced Letterpress	3
GDES 403	Design Activism	3
GDES 404	Typeface Design	3
GDES 408	Advanced Web Design	3
GDES 412	Typography III	3
GDES 413	Package Design	3
GDES 414	Exhibition and Environmental Graphic Design	3
GDES 417	Interdisciplinary Team Design	3
GDES 418	Design Center	3-9
GDES 445	Problem Seeking	3
GDES 491	Studio Topics in Design	3
GDES 492	Design Internship	1-3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

#### Fall semester

ARTF 131	Drawing Studio	3
----------	----------------	---

ARTF 132	Surface Research	3
ARTF 139	Project	1
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I	3
Quantitative literacy course (University Core)		3
Term Hours:		16

#### Spring semester

ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	1
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3
Term Hours:		16

### Sophomore year

#### Fall semester

GDES 212	Design Form and Communication	3
GDES 211	Typography I	3
GDES 214	Imaging I	3
GDES 252	History of Visual Communication	3
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		15

#### Spring semester

GDES 202	Design Technology	3
GDES 205	Design Methods and Processes	3
GDES 213	Typography II	3
GDES 216	Imaging II	3
GDES 253	Theory and Philosophy of Visual Communication	3
Term Hours:		15

### Junior year

#### Fall semester

GDES 343	Systems in Design	3
GDES 345	Print I	3
GDES 347	Interaction I	3
GDES elective (300- to 500-level)		3
Humanities/fine arts course (University Core)		3
Term Hours:		15

#### Spring semester

GDES 346	Visual Narrative I	3
GDES 365	Print II	3
GDES 367	Interaction II	3
Natural/physical sciences course (University Core)		3
General Education elective		3
Term Hours:		15

### Senior year

#### Fall semester

GDES 470	Senior Seminar	3
GDES Elective (300- to 500-level)		3
General Education electives		6
Open elective (300- to 500-level)		3
Term Hours:		15

**Spring semester**

GDES 472 Senior Studio (capstone)	3
GDES electives (300- to 500-level)	6
Open electives (300- to 500-level)	6
Term Hours:	15
Total Hours:	122

## Department of Interior Design

**Christiana Lafazani**

Associate professor and chair

[arts.vcu.edu/interiordesign](http://arts.vcu.edu/interiordesign) (<http://arts.vcu.edu/interiordesign>)

The Department of Interior Design is accredited by the Council for Interior Design Accreditation. The mission of the department is to provide an intellectually rigorous, studio-based experience grounded in the issues of interior architecture. The department develops in its students an enduring passion and curiosity for their work, a determination to continually seek quality in their endeavors, an ability to reflect constructively upon their actions as individuals and a responsibility for their lifelong education. The department focuses students' professional activities while encouraging connections between these activities and the larger forum of ideas that enrich their culture and environment. The Bachelor of Fine Arts in Interior Design program prepares students for careers in interior design or entry into programs of advanced study.

The department also offers a Master of Fine Arts in Design with a concentration in interior environments with a first-professional track and a postprofessional track. These tracks seek to produce competent creative designers whose design solutions are based on human response in the contemporary environment. Mastery of design skills, development of productive habits, knowledge of resources and an awareness of interrelated disciplines equip the student with the tools and expertise necessary to pursue creative design positions.

The department relates with the professional interior design community through a variety of activities. The faculty invites featured speakers to share experiences, participate in the annual ASID EXPO, facilitate mentorships with professional designers and support student internships. An active student chapter of the American Society of Interior Designers provides additional enriching opportunities for student involvement.

The department offers limited accelerated undergraduate preparation for those individuals who lack full preparation. Assessment of the individual candidate's needs will determine the scope of the preparatory course work. This is an opportunity to gain the skills and design experiences required to qualify for admission to the graduate degree program.

The department has a very comprehensive website with extensive information about the program, interior design in general, faculty, student work and the department newsletter. In advance of scheduling a meeting for department advising or for application to the program, students should review the website at [arts.vcu.edu/interiordesign](http://arts.vcu.edu/interiordesign) (<http://arts.vcu.edu/interiordesign>).

- Interior Design, Bachelor of Fine Arts (B.F.A.) (p. 302)

## Interior Design, Bachelor of Fine Arts (B.F.A.)

The Department of Interior Design, accredited by the Council for Interior Design Accreditation, provides the breadth of a university education with the depth of a professional curriculum. The curriculum provides for the study of space, form, color and light in collaboration with the pragmatic investigation of building codes, materials, finishes, construction methods and business practices. An important focus also is placed on the study of design theory and the history of interior environments. All of these areas are synthesized in the curriculum to provide learning of the overall context of the built interior environment. Graduates are prepared with the skills and knowledge that can facilitate the student's transition into an entry-level interior design position at a successful firm or corporation, or entry into programs of advanced study. The department also prepares students with the skills and knowledge that will allow for lifelong learning and professional development in the design industry. Prospective students are encouraged to review the School of the Arts undergraduate admissions website as well as the Art Foundation Program website.

### Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

1. Students will demonstrate professional values. The students will demonstrate professional values that address client and user needs in response to the built environment, professional ethics, environmental ethics and the role of sustainability in the practice of interior design. Students will demonstrate an understanding of a global perspective approach to thinking and problem-solving (viewing design with awareness and respect for cultural and social differences of people; understanding issues that affect the sustainability of the planet; understanding of the implications of conducting the practice of design within a world market). Students will demonstrate critical and analytical thinking, creative thinking, and the ability to think visually and volumetrically. Students will demonstrate professional discipline (i.e., time management, organizational skills) and active listening skills. Students will understand the importance of community and public service.
2. Student work will demonstrate design fundamentals. Students will demonstrate knowledge of design fundamentals including design elements and principles, color principles, theories and systems, theories of design and composition, and principles and theories of lighting design. Students will demonstrate an understanding of the theories of human behavior in the built environment including human factors (ergonomics, anthropometrics), the relationship between human behavior and the built environment, and an understanding of the principles of sustainability. Students will demonstrate knowledge of the history of art, architecture and design.
3. Student work will demonstrate knowledge of interior design. Students will demonstrate knowledge and application of the design process and two- and three-dimensional design elements and principles in the development of the spatial envelope. Student work will demonstrate programming skills, including problem identification, identification of client and user needs, and information gathering research and analysis (functional requirements, code research, sustainability issues, etc.). Student work will demonstrate competent schematic design, concept development and problem-solving (concept statements, conceptual drawings, space planning). Student work will demonstrate competent design development skills (selection of



finishes and materials; furniture selection and plan, plans, elevations, sketches, and study models; luminaires and lighting sources; design justification solutions in relation to the program and concept; appropriate selection and application of decorative architectural elements). Student work will demonstrate competent skills in preparing drawings, schedules and specifications as an integrated system in a single project. Student work should demonstrate an understanding of appropriate selection and application of art and accessories, the ability to custom design interior elements, way-finding methods and graphic identification. Student work must demonstrate understanding that design solutions affect and are impacted by building systems and interior materials. Students must demonstrate understanding of the impact of laws, codes, regulations, standards and practices that protect the health, safety and welfare of the public.

4. Student work will demonstrate effective communication. Student work will demonstrate competence in drafting and lettering, both manual and computer-aided techniques; illustrative drawing; and presentation of color, materials and furnishings. Students must express ideas clearly in oral presentations and critiques; communicate clearly in writing of specifications, schedules, and contracts and other business-related documents, such as project programs, concept statements, reports, research papers, resumes and correspondence. Student work must demonstrate the student's ability to successfully render the design intent using two- and three-dimensional methods (manual and computer-aided).
5. Students will demonstrate a foundation in business and professional practices. Students will demonstrate understanding of project management (estimating, budget management, contract administration, information management, conflict resolution, assessment processes including post-occupancy evaluation). Students must demonstrate knowledge of licensing and registration requirements for interior designers and professional design organizations. Students must demonstrate understanding of basic business computer applications (word processing, spreadsheets) and business procedures (marketing, strategic planning).

## Standards of interior design

1. Students who have successfully completed the Art Foundation Program may enter the program in the fall semester only. All applicants must submit a portfolio of work. The department uses the portfolio evaluation criteria established in the School of the Arts for initial acceptance. A second portfolio review of interior design studio work takes place at the end of the sophomore year. The faculty uses the portfolio as an advising tool to determine student placement in the program. The student's GPA also is evaluated to determine if the student may continue in the program. The following courses must be completed at the end of the sophomore year to be eligible for continuation in the program:

IDES 201	Introductory Interior Design Studio I	4
IDES 202	Introductory Interior Design Studio II	4
IDES 211	Interior Graphics I	3
IDES 212	Interior Graphics II	3
IDES 231	Fundamentals of Interior Design	3
IDES 251	Historic Environments: Ancient Through 19th Century	3
IDES 252	Historic Environments: 20th-21st Centuries	3
IDES 311	Advanced Interior Graphics I	3

2. Students who wish to transfer into the interior design program must first apply to the Art Foundation Program for evaluation. A student must demonstrate equivalent preparation at other institutions and submit a portfolio of work for review by interior design faculty. Transfer students admitted into the program must complete all major requirements determined to be missing from their academic design experience.
3. Students must complete the required pre- and corequisites of the program in the order presented in the curriculum outline. This structure enables students to develop knowledge and skill bases in interior design that will prepare them for upper-level interior design studio courses (IDES 301, IDES 302, IDES 400 and IDES 401) and successful entry into the interior design profession.
4. Students must earn a minimum 2.5 GPA on all work before entering the program, in the semester immediately before entering the major and each semester they continue in the program. Students must maintain a minimum grade of C in each studio in order to continue to the next semester of studio courses.
5. Students are required to have a laptop computer and appropriate software upon entry into the interior design program. The department recommends a specific computer package that is used throughout the academic year. The package is updated each year because of changes in computer technology. The total cost is approximately \$3,800 and financial aid is available to those who qualify. An interior design student kit also is required upon initial entry into the program; it contains a variety of drawing supplies for graphics and interior design studios. Students will receive the computer requirements and student kit requirements upon acceptance into the program.
6. Students with experience in interior design or related fields may challenge some interior design courses based on regulations for "Undergraduate credit by examination (p. 18)" as stated in this bulletin. Students must be accepted into the interior design program and challenges are based upon demonstrated experience, portfolio work and professional years of experience. No more than nine credit hours may be challenged and the challenge may not be requested during the final semester before graduation. Courses that may be challenged include:

IDES 211	Interior Graphics I	3
IDES 212	Interior Graphics II	3
IDES 231	Fundamentals of Interior Design	3
IDES 321	Interior Materials and Textiles	3
IDES 324	Furniture Design	3
IDES 431	ID Business Practices	3

7. A student majoring in interior design who does not enroll in courses in the major as a full-time student for three or more consecutive semesters (including summer) must reapply to the program, submitting a portfolio and undergoing a grade review.

## Special requirements

- Students may enter the Interior Design program in the fall semester only.
- Students must earn at a minimum 2.5 GPA on all work before entering the program, in the semester immediately before entering the major and each semester they continue in the program.

## Degree requirements for Interior Design, Bachelor of Fine Arts (B.F.A.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

General Education electives	6
General education elective (300- to 400-level)	3
Total Hours	9

### Collateral requirements

#### Art Foundation Program

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	2

#### Art history

ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
Total Hours		20

### Major requirements

IDES 201	Introductory Interior Design Studio I	4
IDES 202	Introductory Interior Design Studio II	4
IDES 211	Interior Graphics I	3
IDES 212	Interior Graphics II	3
IDES 231	Fundamentals of Interior Design	3
IDES 251	Historic Environments: Ancient Through 19th Century	3
IDES 252	Historic Environments: 20th-21st Centuries	3
IDES 301	Interior Design Studio I	4
IDES 302	Interior Design Studio II	4
IDES 311	Advanced Interior Graphics I	3
IDES 312	Advanced Interior Graphics II	3
IDES 321	Interior Materials and Textiles	3
IDES 323	Light and Color in Interior Environments	3
IDES 400	Senior Interior Design Studio I	4
IDES 401	Senior Interior Design Studio II	4
IDES 422	Building Systems	3
IDES 431	ID Business Practices	3
IDES 441	Senior Design Seminar I (capstone)	2
IDES 442	Senior Design Seminar II (capstone)	2

IDES 493	Interior Design Internship	3
Total Hours		64

### Art/design electives

Select a minimum of three Art/design elective (any)	3
Select a minimum of three Art/design elective (300- to 400-level)	3
Total Hours	6

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project	1
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I	3
Quantitative literacy course (University Core)		3-4
Term Hours:		16-17

#### Spring semester

ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	1
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3-4
Term Hours:		16-17

#### Sophomore year

Fall semester		
IDES 201	Introductory Interior Design Studio I	4
IDES 211	Interior Graphics I	3
IDES 231	Fundamentals of Interior Design	3
IDES 251	Historic Environments: Ancient Through 19th Century	3
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		16

#### Spring semester

IDES 202	Introductory Interior Design Studio II	4
IDES 212	Interior Graphics II	3
IDES 252	Historic Environments: 20th-21st Centuries	3
IDES 311	Advanced Interior Graphics I	3
Natural/physical sciences course (University Core)		3-4
Term Hours:		16-17

#### Junior year

Fall semester		
IDES 301	Interior Design Studio I	4
IDES 312	Advanced Interior Graphics II	3
IDES 321	Interior Materials and Textiles	3
IDES 323	Light and Color in Interior Environments	3

Humanities/fine arts course (University Core)	3
Term Hours:	16
<b>Spring semester</b>	
IDES 302 Interior Design Studio II	4
IDES 431 ID Business Practices	3
Art/design elective	3
General education elective	3
Term Hours:	13
<b>Senior year</b>	
<b>Fall semester</b>	
IDES 400 Senior Interior Design Studio I	4
IDES 422 Building Systems	3
IDES 441 Senior Design Seminar I (capstone)	2
IDES 493 Interior Design Internship	3
General education elective	3
Term Hours:	15
<b>Spring semester</b>	
IDES 401 Senior Interior Design Studio II (capstone)	4
IDES 442 Senior Design Seminar II (capstone)	2
Art/design elective (300- to 400-level)	3
General education elective (300- to 400-level)	3
Term Hours:	12
Total Hours:	120-123

## Department of Kinetic Imaging

**Pam Turner**

Associate professor and chair

[arts.vcu.edu/kineticimaging](http://www.arts.vcu.edu/kineticimaging) (<http://www.arts.vcu.edu/kineticimaging>)

The Department of Kinetic Imaging prepares students to use video, animation and sound for the purpose of art-making, self-expression and experimentation. The kinetic imaging programs are designed for students who want to study video art, sound design and experimental two-dimensional and three-dimensional animation. Emphasis is placed on artistic uses of the media.

The department offers an undergraduate curriculum leading to a Bachelor of Fine Arts in Kinetic Imaging as well as a graduate level program that results in a Master of Fine Arts in Fine Arts.

- Kinetic Imaging, Bachelor of Fine Arts (B.F.A.) (p. 305)

## Kinetic Imaging, Bachelor of Fine Arts (B.F.A.)

The Department of Kinetic Imaging prepares students to use video, animation and sound for the purpose of art-making, self-expression and experimentation. The program is designed for students who want to study video art, sound design and experimental two- and three-dimensional animation. Emphasis is placed on artistic uses of the media.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students will know how to communicate effectively and purposefully, while using the full potential of contemporary tools and creative skills.
- Students will be able to produce works of art in video and animation, with a knowledge and command of the grammar of the moving image (animation, video and hybrids), virtual environments and sonic arts.
- Students will be cognizant of critical social and cultural issues pertinent to the pervasive presence of media and digital technology.
- Students will be able to communicate both in an oral and written context regarding their work and the context of current audio/video art.

## Degree requirements for Kinetic Imaging, Bachelor of Fine Arts (B.F.A.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

History (any HIST course)	3
Humanities/fine arts/social science/science (AFAM, AMST, ARTH, BIOL, CMSC, FRSC, GSWS, HIST, HUMS, INSC, MASC, MATH, MHIS, MGMT, PHIL, POLI, PSYC, RELS, SOCY, STAT, WRLD)	3
Literature (any ENGL course)	3
Total Hours	9

### Collateral requirements

#### Art Foundation

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	2

#### Art history

ARTH 103	Survey of Art I	3
ARTH 104	Survey of Art II	3
Total Hours		20

### Major requirements

KINE 208	Introduction to Computer Techniques	3
KINE 233	Media Arts Survey	3
KINE 234	Animation I	3
KINE 235	Animation II	3
KINE 236	Video I	3
KINE 237	Sound Communications I	3
KINE 336	Video II	3

KINE 338	3-D Computer Animation I	3
KINE 357	Critical Issues in the Media (capstone)	3
KINE 403	Senior Studio	3
Emphasis area electives (300 level or above) <sup>1</sup>		30
Emphasis area lecture or seminar (300 level or above)		3
Total Hours		63

<sup>1</sup> Select courses in KINE or any School of the Arts area (except art education) or approved ENGL (creative writing) or WRLD (world cinema) that are applicable to an individual's major course of study through adviser consultation. See electives list below.

## Open electives

Select seven open elective credits 7

## Total minimum requirement 120 credits

### Electives

Emphasis area electives must be 300- to 400-level and include:

KINE 308	Web Technologies for Media Artists	3
KINE 335	Motion Graphics	3
KINE 337	Sound Communication II	3
KINE 392	Research/Individual Study	1-4
KINE 434	Animation III	3
KINE 436	Video III	3
KINE 438	3-D Computer Animation II	3
KINE 439	Video IV	3
KINE 457	Socially Engaged Media	3
KINE 458	Virtual Interactive Worlds	3
KINE 464	Animation IV	3
KINE 492	Internship	1-3
KINE 491	Studio Topics	1-4
ARTH, ARTS, CINE, COAR, CRAF, DANC, GDES, FASH, IDES, MHIS, MUSC, PAPP, PHTO, SCPT, THEA		
Select a maximum of six credits from the following:		6
ENGL 303	Writing for Stage and/or Screen	
ENGL 305	Writing Poetry	
ENGL 307	Writing Fiction	
ENGL 309	Writing Creative Nonfiction	
ENGL 435	Advanced Poetry Writing	
ENGL 437	Advanced Fiction Writing	
ENGL 439	Advanced Creative Nonfiction Writing	
ENGL 491	Topics in Writing	
WRLD 330	Introduction to Film Studies	
WRLD 359	International Media Coverage: The Middle East	
WRLD 422	National Cinema	
WRLD 430	Film and the City	

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 133	Space Research	3
ARTF 139	Project	1
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I	3
Quantitative literacy course (University Core)		3
Term Hours:		16

### Spring semester

ARTF 132	Surface Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	1
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3
Term Hours:		16

### Sophomore year

Fall semester		Hours
KINE 208	Introduction to Computer Techniques	3
KINE 233	Media Arts Survey	3
KINE 234	Animation I	3
UNIV 200	Inquiry and the Craft of Argument	3
General education: humanities/fine arts/social science/science course		3
Term Hours:		15

### Spring semester

KINE 235	Animation II	3
KINE 236	Video I	3
KINE 237	Sound Communications I	3
Humanities/fine arts course (University Core) (ENGL 215 recommended)		3
Natural/physical sciences course (University Core)		3
Term Hours:		15

### Junior year

Fall semester		Hours
KINE 336	Video II	3
KINE 338	3-D Computer Animation I	3
Emphasis area electives		6
General education: history course		3
Term Hours:		15

### Spring semester

KINE 357	Critical Issues in the Media	3
Emphasis area electives		9
Emphasis area lecture or seminar		3
Term Hours:		15

### Senior year

Fall semester		Hours
Emphasis area electives		9
General education elective: literature course		3
Open elective		3
Term Hours:		15

**Spring semester**

KINE 403	Senior Studio	3
Emphasis area electives		6
Open elective		4
Term Hours:		13
Total Hours:		120

## Department of Music

**Darryl Harper, D.M.A.**

Associate professor and chair

arts.vcu.edu/music (<http://arts.vcu.edu/music>)

VCU Music: Educating musicians to shape the stage, the classroom and the world

The Department of Music is committed to the advancement of Western art music and jazz as academic disciplines, as fields of professional endeavor and as significant expressions of culture. Entrance and graduation requirements comply with the National Association of Schools of Music guidelines. The department offers degree programs at the baccalaureate and master's levels, and each of them are described in detail on individual program pages within the Bulletins website. Students in the VCU Music community are involved in a musically rich environment of studio lessons, small classes, independent study and performances. They hear outstanding professional performers in the classical and jazz traditions and attend on-campus master classes with major touring artists. Student soloists also may appear with regional and university ensembles. Through the Mary Anne Rennolds Chamber Concert Series and other events, the department is one of the region's major sponsors of music performances. Approximately 300 students choose to major in music, with many other students from throughout the university taking courses and participating in ensembles. There are 25 full-time faculty, more than half of whom hold doctorates, in addition to 45 part-time instructors. Among the faculty are internationally recognized performers, composers, researchers and teachers — musician-educators who are active in all facets of the professional music world. The faculty includes members and regular performers with ensembles that include the Richmond and Virginia symphonies, the New York Philharmonic, the Virginia Opera, Rhythm and Brass, and the Atlantic Chamber Ensemble. The faculty maintains a high level of recognition through each individual's publications, recordings, international performances and lectures. The department is housed in two buildings. The principal facility is the W.E. Singleton Center for the Performing Arts, which includes the 502-seat Sonia Vlahcevic Concert Hall, faculty offices, rehearsal rooms and special studios for organ, percussion and piano. The James W. Black Music Center has a 347-seat recital hall, classrooms, practice rooms, rehearsal spaces, faculty offices and studios.

## Admission and auditions

An audition and interview are necessary for admission to programs in the Department of Music. Students must also meet the general admission requirements of the university. For audition information contact Virginia Commonwealth University, Department of Music, 922 Park Ave., P.O. Box 842004, Richmond, VA 23284-2004; phone (804) 828-1169 or email [apply4music@vcu.edu](mailto:apply4music@vcu.edu).

## Music education candidacy

In order to achieve candidacy, music education majors must maintain a minimum cumulative GPA of 2.8 and must demonstrate satisfactory

completion of the Praxis I, ACT or SAT. Music education students who do not achieve candidacy will not be allowed to continue in the music education program, but may continue in one of the other music degree programs provided they meet the requirements.

## Courses for non-majors

Students majoring in a field other than music are welcome and encouraged to register for ensembles, private lessons and a variety of classroom courses in music specifically designed for the non-music major. Some courses require an audition.

## Grades and achievement levels

All music majors are required to maintain a cumulative GPA of 2.0 and pass at least one applied achievement level within any two-semester period (not including summers) in order to continue as music majors. Jazz studies majors must pass one applied achievement level of classical instrument study per two-semester period (not including summers) and at least one jazz applied music level within the first three semesters in order to maintain a jazz studies concentration. All music students also must pass MHIS 145-MHIS 146 by the end of the fourth semester. Any student who fails to meet or maintain these standards will not be allowed to continue as a music major. A student may audition for readmission into the department as a music major only with permission from the Department of Music.

A cumulative GPA of 2.8 is required for music education students to qualify for student teaching placement. Music education students who do not maintain a cumulative 2.8 GPA will not be allowed to continue in the music education track, but may continue in the Bachelor of Arts program or the Bachelor of Music performance track if they meet the minimum requirements that apply to those respective degree programs.

## Electives in music

Students majoring in a field other than music may register for ensembles, private lessons and a variety of classroom courses in music. Classes in music appreciation, African-American music, introduction to writing music, basic music skills and special offerings in music are specifically designed for the non-music major.

## Internship in music

Interested students should consult with a faculty member closely associated with the appropriate field. As the student approaches junior academic standing, he or she may apply to the department for participation in APPM 493. Applications will be reviewed on the basis of academic GPA, instructor recommendation(s), professional promise, and demonstrated interest and competence in the area of study. The student must possess a minimum 2.5 overall GPA with a minimum 3.0 GPA in major course work in music. All students (including transfers) must have completed a minimum of 60 credits.

All internships for credit are approved by the Department of Music. The experience may also be coordinated by VCU's Cooperative Education/ Internship Program. The latter office requires completion of an application and resume.

## Fees

All students registering for applied lessons (APPL 200) pay an applied lesson fee. Current fee rates for applied lessons ([http://www.enrollment.vcu.edu/accounting/%20tuition\\_fees.html](http://www.enrollment.vcu.edu/accounting/%20tuition_fees.html)) can be found on the Student Accounting website.



Recital/convocation attendance

All undergraduate majors are required to pass four semesters of recital/convocation attendance for graduation. During each semester of enrollment, the student must attend a minimum number of concerts or recitals plus departmental convocations in order to pass the requirement.

Master class

This requirement consists of participation in weekly master classes in the student’s applied major area. For students in the Bachelor of Music program, enrollment in master class is required for each semester that students enroll for a two-credit lesson on their principal performing instrument. A minimum of eight semesters in the performance concentration (jazz studies majors take four semesters classical and four semesters jazz) and six semesters for the music education concentration are required. Students in the Bachelor of Arts in Music program must also enroll in master class each semester they take a two-credit lesson until they complete a minimum of four semesters of master class on the same instrument.

Ensemble requirements

To ensure consistent skill development in ensemble settings, only one large ensemble credit per semester will be counted toward a student’s large ensemble requirements. Students whose principal instrument is a band or orchestral instrument must satisfy the large ensemble requirement by performing in a large ensemble on that instrument. Students whose principal instrument is voice must satisfy the requirement by performing in a large choral ensemble on voice. Those whose principal instrument is piano must complete four of their six elective credits by playing the piano in ensembles. Jazz studies majors must have ensembles approved in advance by their adviser or program director. Bachelor of Arts students must earn six credits in either large or small ensembles.

- Music, Bachelor of (B.M.) with a concentration in music education/instrumental (p. 308)
- Music, Bachelor of (B.M.) with a concentration in music education/vocal-choral (p. 310)
- Music, Bachelor of (B.M.) with a concentration in performance/guitar (p. 312)
- Music, Bachelor of (B.M.) with a concentration in performance/jazz studies (p. 314)
- Music, Bachelor of (B.M.) with a concentration in performance/piano (p. 316)
- Music, Bachelor of (B.M.) with a concentration in performance/strings (p. 318)
- Music, Bachelor of (B.M.) with a concentration in performance/winds and percussion (p. 322)
- Music, Bachelor of (B.M.) with a concentration in performance/voice (p. 320)
- Music, Bachelor of Arts (B.A.) (p. 324)
- Music, minor in (p. 325)

Music, Bachelor of (B.M.) with a concentration in music education/instrumental

The Bachelor of Music with a music education/instrumental concentration incorporates requirements necessary to qualify for the commonwealth of Virginia’s Collegiate Professional Certificate to teach music in public schools. Reciprocity between Virginia and numerous other states makes it possible for those music education students who become certified to teach in Virginia to obtain certification in those other states. A prospective student intending to pursue the instrumental concentration endorsement must complete the degree with a primary instrument of wind band or orchestra tradition; for those seeking the vocal-choral concentration endorsement, this instrument must be voice. For a student who wishes to elect the guitar or piano as a primary instrument, please contact the music department for details.

Learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate professional music teaching competencies
- Acquire professional procedures
- Demonstrate professional performance skills
- Develop comprehensive musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

Special requirements

A cumulative GPA of 2.8 is required for music education students to qualify for student teaching placement. Music education students who do not maintain a cumulative 2.8 GPA will not be allowed to continue in the music education track, but may continue in the Bachelor of Arts program or the Bachelor of Music performance track if they meet the minimum requirements that apply to those respective degree programs.

Degree requirements for Music, Bachelor of (B.M.) with music education/instrumental concentration

General Education requirements

University Core Education Curriculum		
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

Additional School of the Arts requirements

HIST 103	Survey of American History	3
or HIST 104	Survey of American History	

General education courses from the College of Humanities and Sciences 6

Total Hours 9

## Collateral requirements

EDUS 301 Human Development and Learning 3

## Major requirements

APPL 311 Applied Lessons (principal performing medium) 2

APPL 312 Applied Lessons (principal performing medium) 2

APPL 313 Applied Lessons (principal performing medium) 2

APPL 314 Applied Lessons (principal performing medium) 2

APPL 415 Applied Lessons (principal performing medium) 2

APPL 416 Applied Lessons and Junior Recital (principal performing medium) 2

Take four semesters of the following: 4

APPL 320 Applied Lessons Secondary Instrument

APPM 173 Keyboard Skills I 1

APPM 174 Keyboard Skills II 1

APPM 273 Keyboard Skills III 1

APPM 199 Recital/Convocation Attendance (four semesters) 0

APPM 299 Master Class (six semesters) 0

APPM 381 Conducting 2

MHIS 120 Introduction to World Musical Styles 2

MHIS 145 Theory and Aural Skills I 4

MHIS 146 Theory and Aural Skills II 4

MHIS 245 Theory and Aural Skills III 4

MHIS 246 Theory and Aural Skills IV 4

MHIS 305 Form and Analysis I 2

MHIS 321 Music History I 2

MHIS 322 Music History II 2

MUED 301 Methods and Techniques: Guitar 1

MUED 302 Methods and Techniques: Voice 1

MUED 303 Methods and Techniques: Woodwinds 1

MUED 304 Methods and Techniques: Woodwinds 1

MUED 305 Methods and Techniques: Brass 1

MUED 306 Methods and Techniques: Strings 1

MUED 307 Methods and Techniques: Percussion 1

MUED 380 Introduction to Music Education 2

MUED 381 Methods and Practicum in Elementary Music Education 3

MUED 382 Secondary Methods/Practicum and Rehearsal Techniques 4

MUED 384 Marching Band Techniques 2

MUED 385 Music Education Technology and Arranging 2

MUED 485 Music Education Student Teaching I: Elementary (capstone) 6

MUED 486 Music Education Student Teaching II: Secondary (capstone) 6

Ensemble requirement (audition may be required): Select seven credits from the following: 7

APPM 355 Orchestra

APPM 356 Symphonic Wind Ensemble

APPM 357 University Band

Ensemble elective (audition may be required): Select at least one from the following list: 3

APPM 363 Flute Choir

APPM 368 Woodwind Ensemble

APPM 369 Percussion Ensemble

APPM 371 String Chamber Music

APPM 372 Brass Ensemble

Additional electives may come from this list or a choice from the ensemble requirement above

Total Hours 87

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
APPL 311	Applied Lessons (principal instrument)	2
APPM 173	Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble requirement	1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I	3
Natural/physical sciences course (University Core)		3
Quantitative literacy course (University Core)		3
Term Hours:		17

### Spring semester

APPL 312	Applied Lessons (principal instrument)	2
APPM 174	Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble requirement	1
MHIS 146	Theory and Aural Skills II	4
MUED 301	Methods and Techniques: Guitar	1
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3
Term Hours:		15

### Sophomore year

Fall semester		Hours
APPL 313	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 273	Keyboard Skills III	1
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble elective	1
APPM 3XX	ensemble requirement	1

MHIS 120	Introduction to World Musical Styles	2
MHIS 245	Theory and Aural Skills III	4
MUED 302	Methods and Techniques: Voice	1
MUED 303	Methods and Techniques: Woodwinds	1
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		16

**Spring semester**

APPL 314	Applied Lessons (principal instrument)	2
APPL 320	Applied Lessons Secondary Instrument	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble elective	1
APPM 3XX	ensemble requirement	1
EDUS 301	Human Development and Learning	3
MHIS 246	Theory and Aural Skills IV	4
MUED 304	Methods and Techniques: Woodwinds	1
Humanities/fine arts course (University Core)		3
Term Hours:		16

**Junior year****Fall semester**

APPL 320	Applied Lessons Secondary Instrument	1
APPL 415	Applied Lessons (principal instrument)	2
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble elective	1
APPM 3XX	ensemble requirement	1
HIST 103 or HIST 104	Survey of American History or Survey of American History	3
MHIS 305	Form and Analysis I	2
MHIS 321	Music History I	2
MUED 306	Methods and Techniques: Strings	1
MUED 380	Introduction to Music Education	2
Term Hours:		15

**Spring semester**

APPL 320	Applied Lessons Secondary Instrument	1
APPL 416	Applied Lessons and Junior Recital (principal instrument)	2
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble requirement	1
APPM 381	Conducting	2
MHIS 322	Music History II	2
MUED 305	Methods and Techniques: Brass	1
MUED 381	Methods and Practicum in Elementary Music Education	3
General education course		3
Term Hours:		15

**Senior year****Fall semester**

APPL 320	Applied Lessons Secondary Instrument	1
APPM 3XX	ensemble requirement	1
MUED 307	Methods and Techniques: Percussion	1
MUED 382	Secondary Methods/Practicum and Rehearsal Techniques	4

MUED 384	Marching Band Techniques	2
MUED 385	Music Education Technology and Arranging	2
General education course		3
Term Hours:		14

**Spring semester**

MUED 485	Music Education Student Teaching I: Elementary	6
MUED 486	Music Education Student Teaching II: Secondary	6
Term Hours:		12
Total Hours:		120

## Music, Bachelor of (B.M.) with a concentration in music education/vocal-choral

The Bachelor of Music with a music education/vocal-choral concentration incorporates requirements necessary to qualify for the commonwealth of Virginia's Collegiate Professional Certificate to teach music in public schools. Reciprocity between Virginia and numerous other states makes it possible for those music education students who become certified to teach in Virginia to obtain certification in those other states. A prospective student intending to pursue the instrumental concentration endorsement must complete the degree with a primary instrument of wind band or orchestra tradition; for those seeking the vocal-choral concentration endorsement, this instrument must be voice. For a student who wishes to elect the guitar or piano as a primary instrument, please contact the music department for details.

## Learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate professional music teaching competencies
- Acquire professional procedures
- Demonstrate professional performance skills
- Develop comprehensive musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

## Special requirements

A cumulative GPA of 2.8 is required for music education students to qualify for student teaching placement. Music education students who do not maintain cumulative 2.8 GPA will not be allowed to continue in the music education track, but may continue in the Bachelor of Arts program or the Bachelor of Music performance track if they meet the minimum requirements that apply to those respective degree programs.

## Degree requirements for Music, Bachelor of (B.M.) with music education/vocal-choral concentration

### General Education requirements

University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional School of the Arts requirements

HIST 103	Survey of American History	3
or HIST 104	Survey of American History	
General education courses from the College of Humanities and Sciences		6
Total Hours		9

### Collateral requirements

EDUS 301	Human Development and Learning	3
----------	--------------------------------	---

### Major requirements

APPL 311	Applied Lessons (principal performing medium)	2
APPL 312	Applied Lessons (principal performing medium)	2
APPL 313	Applied Lessons (principal performing medium)	2
APPL 314	Applied Lessons (principal performing medium)	2
APPL 415	Applied Lessons (principal performing medium)	2
APPL 416	Applied Lessons and Junior Recital (principal performing medium)	2

Take four semesters of the following: 4

APPL 320	Applied Lessons Secondary Instrument	
APPM 161	Lyric Diction	3
APPM 162	Lyric Diction	3
APPM 173	Keyboard Skills I	1
APPM 174	Keyboard Skills II	1
APPM 273	Keyboard Skills III	1
APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 299	Master Class (six semesters)	0
APPM 377	Vocal Chamber Ensemble	1
APPM 381	Conducting	2
MHIS 120	Introduction to World Musical Styles	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
MHIS 246	Theory and Aural Skills IV	4
MHIS 305	Form and Analysis I	2
MHIS 321	Music History I	2
MHIS 322	Music History II	2
MUED 301	Methods and Techniques: Guitar	1
MUED 302	Methods and Techniques: Voice	1

MUED 303	Methods and Techniques: Woodwinds	1
MUED 304	Methods and Techniques: Woodwinds	1
MUED 305	Methods and Techniques: Brass	1
MUED 306	Methods and Techniques: Strings	1
MUED 307	Methods and Techniques: Percussion	1
MUED 380	Introduction to Music Education	2
MUED 381	Methods and Practicum in Elementary Music Education	3
MUED 382	Secondary Methods/Practicum and Rehearsal Techniques	4
MUED 385	Music Education Technology and Arranging	2
MUED 485	Music Education Student Teaching I: Elementary (capstone)	6
MUED 486	Music Education Student Teaching II: Secondary (capstone)	6
Ensemble requirement (audition may be required): Select seven credits from the following:		7
APPM 358	Commonwealth Singers	
APPM 359	Choral Arts Society	
APPM 378	Women's Choir	
Total Hours		89

### Total minimum requirement 122 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
APPL 311	Applied Lessons (voice)	2
APPM 161	Lyric Diction	3
APPM 173	Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (voice)	0
APPM 3XX ensemble requirement		1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I	3
Natural/physical sciences course (University Core)		3
Term Hours:		17

#### Spring semester

APPL 312	Applied Lessons (voice)	2
APPM 162	Lyric Diction	3
APPM 174	Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX ensemble requirement		1
MHIS 146	Theory and Aural Skills II	4
MUED 301	Methods and Techniques: Guitar	1
UNIV 112	Focused Inquiry II	3
Quantitative literacy course (University Core)		3
Term Hours:		18

#### Sophomore year

##### Fall semester

APPL 313	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 273	Keyboard Skills III	1
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble requirement	1
MHIS 120	Introduction to World Musical Styles	2
MHIS 245	Theory and Aural Skills III	4
MUED 302	Methods and Techniques: Voice	1
MUED 303	Methods and Techniques: Woodwinds	1
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		15

**Spring semester**

APPL 314	Applied Lessons (voice)	2
APPL 320	Applied Lessons Secondary Instrument	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble requirement	1
EDUS 301	Human Development and Learning	3
MHIS 246	Theory and Aural Skills IV	4
MUED 304	Methods and Techniques: Woodwinds	1
Humanities/fine arts course (University Core)		3
Term Hours:		15

**Junior year****Fall semester**

APPL 320	Applied Lessons Secondary Instrument	1
APPL 415	Applied Lessons (voice)	2
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble requirement	1
MHIS 305	Form and Analysis I	2
MHIS 321	Music History I	2
MUED 306	Methods and Techniques: Strings	1
MUED 380	Introduction to Music Education	2
Social/behavioral sciences course (University Core)		3
Term Hours:		14

**Spring semester**

APPL 320	Applied Lessons Secondary Instrument	1
APPL 416	Applied Lessons and Junior Recital (voice)	2
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble requirement	1
APPM 381	Conducting	2
HIST 103 or HIST 104	Survey of American History or Survey of American History	3
MHIS 322	Music History II	2
MUED 305	Methods and Techniques: Brass	1
MUED 381	Methods and Practicum in Elementary Music Education	3
Term Hours:		15

**Senior year****Fall semester**

APPL 320	Applied Lessons Secondary Instrument	1
APPM 3XX	Ensemble requirement	1

APPM 377	Vocal Chamber Ensemble	1
MUED 307	Methods and Techniques: Percussion	1
MUED 382	Secondary Methods/Practicum and Rehearsal Techniques	4
MUED 385	Music Education Technology and Arranging	2
General education courses		6
Term Hours:		16
<b>Spring semester</b>		
MUED 485	Music Education Student Teaching I: Elementary	6
MUED 486	Music Education Student Teaching II: Secondary	6
Term Hours:		12
Total Hours:		122

## Music, Bachelor of (B.M.) with a concentration in performance/guitar

The Bachelor of Music is the initial professional degree in music. Its primary emphasis is on development of the skills, concepts and sensitivities essential to the professional life of the musician. At the center of the instructional program for this degree is the music core curriculum, comprising 27 credits of instruction in aspects of musicianship fundamental to all music degree programs. Included are courses in music theory, aural skills, music history and conducting.

## Learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate professional performance skills
- Demonstrate comprehensive musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

## Degree requirements for Music, Bachelor of (B.M.) with performance/guitar concentration

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional School of the Arts requirements

Select one of the following:		3
HIST 101	Survey of European History	
HIST 102	Survey of European History	



HIST 103	Survey of American History	
HIST 104	Survey of American History	
General education courses from the College of Humanities and Sciences		6
Total Hours		9

## Major requirements

APPL 311	Applied Lessons (principal performing medium)	2
APPL 312	Applied Lessons (principal performing medium)	2
APPL 313	Applied Lessons (principal performing medium)	2
APPL 314	Applied Lessons (principal performing medium)	2
APPL 415	Applied Lessons (principal performing medium)	2
APPL 416	Applied Lessons and Junior Recital (principal performing medium)	2
APPL 417	Applied Lessons (principal performing medium)	2
APPL 418	Applied Lessons and Senior Recital (principal performing medium)	2
Take the following three semesters:		3
APPL 320	Applied Lessons Secondary Instrument	
APPM 173	Keyboard Skills I	1
APPM 174	Keyboard Skills II	1
APPM 273	Keyboard Skills III	1
APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 299	Master Class (eight semesters)	0
Take eight semesters of the following:		8
APPM 364	Guitar Ensemble	
APPM 381	Conducting	2
APPM 463	Pedagogy	2
APPM 492	Senior Project: Portfolio Review (capstone)	1
MHIS 120	Introduction to World Musical Styles	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
MHIS 246	Theory and Aural Skills IV	4
MHIS 305	Form and Analysis I	2
MHIS 321	Music History I	2
MHIS 322	Music History II	2
MHIS 380	Survey of the Music Industry	3
Ensemble requirement (audition may be required): Select four credits from the ensemble requirements or from the following:		4
APPM 358	Commonwealth Singers	
APPM 359	Choral Arts Society	
APPM 377	Vocal Chamber Ensemble	
APPM 378	Women's Choir	
Music electives		15

Select from any AMPT, APPL, APPM, ARTS, MHIS or MUED course not otherwise required for the degree.

Total Hours 81

## Open electives

Select nine open elective credits 9

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
APPL 311	Applied Lessons (principal instrument)	2
APPM 173	Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance (guitar)	0
APPM 364	Guitar Ensemble	1
APPM 3XX ensemble elective		1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I	3
Quantitative literacy course (University Core)		3
Term Hours:		15

### Spring semester

APPL 312	Applied Lessons (principal instrument)	2
APPM 174	Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance (guitar)	0
APPM 364	Guitar Ensemble	1
APPM 3XX ensemble elective		1
MHIS 146	Theory and Aural Skills II	4
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3
Term Hours:		15

### Sophomore year

#### Fall semester

APPL 313	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 273	Keyboard Skills III	1
APPM 299	Master Class (guitar)	0
APPM 364	Guitar Ensemble	1
MHIS 120	Introduction to World Musical Styles	2
MHIS 245	Theory and Aural Skills III	4
UNIV 200	Inquiry and the Craft of Argument	3
Humanities/fine arts course (University Core)		3
Term Hours:		16

#### Spring semester

APPL 314	Applied Lessons (guitar)	2
APPL 320	Applied Lessons Secondary Instrument	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (guitar)	0
APPM 364	Guitar Ensemble	1
APPM 3XX ensemble elective		1

HIST 101	Survey of European History	3
or HIST 102	or Survey of European History	
or HIST 103	or Survey of American History	
or HIST 104	or Survey of American History	
MHIS 246	Theory and Aural Skills IV	4
Natural/physical sciences course (University Core)		3
Term Hours:		15
<b>Junior year</b>		
<b>Fall semester</b>		
APPL 320	Applied Lessons Secondary Instrument	1
APPL 415	Applied Lessons (guitar)	2
APPM 299	Master Class (guitar)	0
APPM 364	Guitar Ensemble	1
APPM 381	Conducting	2
APPM 3XX	ensemble elective	1
MHIS 305	Form and Analysis I	2
MHIS 321	Music History I	2
General education course		3
Term Hours:		14
<b>Spring semester</b>		
APPL 320	Applied Lessons Secondary Instrument	1
APPL 416	Applied Lessons and Junior Recital (guitar)	2
APPM 299	Master Class (guitar)	0
APPM 364	Guitar Ensemble	1
APPM 463	Pedagogy	2
MHIS 322	Music History II	2
Music electives		6
Term Hours:		14
<b>Senior year</b>		
<b>Fall semester</b>		
APPL 417	Applied Lessons (guitar)	2
APPM 299	Master Class (guitar)	0
APPM 364	Guitar Ensemble	1
MHIS 380	Survey of the Music Industry	3
Open electives		3
Music elective		6
Term Hours:		15
<b>Spring semester</b>		
APPL 418	Applied Lessons and Senior Recital (guitar)	2
APPM 299	Master Class (guitar)	0
APPM 364	Guitar Ensemble	1
APPM 492	Senior Project: Portfolio Review (University Core capstone)	1
Open electives		6
Music elective		3
General education course		3
Term Hours:		16
Total Hours:		120

## Music, Bachelor of (B.M.) with a concentration in performance/jazz studies

The Bachelor of Music is the initial professional degree in music. Its primary emphasis is on development of the skills, concepts and sensitivities essential to the professional life of the musician. At the center of the instructional program for this degree is the music core curriculum, comprising 27 credits of instruction in aspects of musicianship fundamental to all music degree programs. Included are courses in music theory, aural skills, music history and conducting.

### Learning outcomes

**Upon completing this program, students will know and know how to do the following.**

Students will:

- Demonstrate professional performance skills
- Demonstrate comprehensive musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

## Degree requirements for Music, Bachelor of (B.M.) with performance/jazz studies concentration

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

### Additional School of the Arts requirements

Select one of the following:		3
HIST 101	Survey of European History	
HIST 102	Survey of European History	
HIST 103	Survey of American History	
HIST 104	Survey of American History	
General education courses from the College of Humanities and Sciences		6
Total Hours		9

### Major requirements

APPL 311	Applied Lessons	2
APPL 312	Applied Lessons	2
APPL 313	Applied Lessons	2
APPL 314	Applied Lessons	2
APPL 321	Applied Lessons Secondary Instrument	2
APPL 322	Applied Lessons Secondary Instrument	2
APPL 323	Applied Lessons Secondary Instrument	2

APPL 324	Applied Lessons Secondary Instrument	2
APPL 415	Applied Lessons	2
APPL 416	Applied Lessons and Junior Recital	2
APPL 417	Applied Lessons	2
APPL 418	Applied Lessons and Senior Recital	2
APPM 173	Keyboard Skills I	1
APPM 174	Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 251	Jazz Improvisation I	3
APPM 252	Jazz Improvisation II	3
APPM 272	Jazz Piano for the Non-keyboard Player	0-1
APPM 299	Master Class (four semesters classical, four semesters jazz)	0
APPM 381	Conducting	2
APPM 492	Senior Project: Portfolio Review (capstone)	1
MHIS 120	Introduction to World Musical Styles	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 147	Jazz Theory and Aural Skills	3
MHIS 245	Theory and Aural Skills III	4
MHIS 246	Theory and Aural Skills IV	4
MHIS 311	Jazz Arranging I	3
MHIS 311	Jazz Arranging I	3
MHIS 322	Music History II	2
MHIS 324	Jazz History	3
MHIS 380	Survey of the Music Industry	3
MHIS 405	Jazz Form and Analysis I	3
Jazz ensemble requirement:		9
APPM 360	Jazz Orchestra (four credits)	
APPM 361	Small Jazz Ensemble (five credits)	
Ensemble elective (audition may be required): Select three credits from the following:		3
APPM 355	Orchestra	
APPM 356	Symphonic Wind Ensemble	
APPM 357	University Band	
APPM 358	Commonwealth Singers	
APPM 359	Choral Arts Society	
APPM 360	Jazz Orchestra	
APPM 361	Small Jazz Ensemble	
APPM 363	Flute Choir	
APPM 364	Guitar Ensemble	
APPM 367	Piano Ensemble	
APPM 368	Woodwind Ensemble	
APPM 369	Percussion Ensemble	
APPM 372	Brass Ensemble	
Total Hours		85-86

## Open electives

Open electives 4-5

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
APPL 311	Applied Lessons (principal instrument)	2
APPL 321	Applied Lessons Secondary Instrument	2
APPM 173	Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (secondary instrument)	0
APPM 361	Small Jazz Ensemble	1
APPM 3XX ensemble elective		1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I	3
Quantitative literacy course (University Core)		3
Term Hours:		17

### Spring semester

APPL 312	Applied Lessons (principal instrument)	2
APPL 322	Applied Lessons Secondary Instrument	2
APPM 174	Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (secondary instrument)	0
APPM 3XX ensemble elective		1
MHIS 146	Theory and Aural Skills II	4
MHIS 147	Jazz Theory and Aural Skills	3
UNIV 112	Focused Inquiry II	3
Term Hours:		16

### Sophomore year

Fall semester		
APPL 313	Applied Lessons (principal instrument)	2
APPL 323	Applied Lessons Secondary Instrument	2
APPM 199	Recital/Convocation Attendance	0
APPM 251	Jazz Improvisation I	3
APPM 272	Jazz Piano for the Non-keyboard Player	0-1
APPM 299	Master Class (secondary instrument)	0
APPM 360	Jazz Orchestra	1
APPM 361	Small Jazz Ensemble	1
MHIS 245	Theory and Aural Skills III	4
Humanities/fine arts course (University Core)		3
Term Hours:		16-17

### Spring semester

APPL 314	Applied Lessons (principal instrument)	2
APPL 324	Applied Lessons Secondary Instrument	2
APPM 199	Recital/Convocation Attendance	0
APPM 252	Jazz Improvisation II	3
APPM 299	Master Class (secondary instrument)	0
APPM 360	Jazz Orchestra	1
APPM 361	Small Jazz Ensemble	1
MHIS 246	Theory and Aural Skills IV	4
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		16

### Junior year

**Fall semester**

APPL 415	Applied Lessons (principal instrument)	2
APPM 299	Master Class (jazz master class)	0
APPM 360	Jazz Orchestra	1
APPM 361	Small Jazz Ensemble	1
HIST 101	Survey of European History	3
or HIST 102	or Survey of European History	
or HIST 103	or Survey of American History	
or HIST 104	or Survey of American History	
MHIS 120	Introduction to World Musical Styles	2
MHIS 311	Jazz Arranging I	3
Natural/physical sciences course (University Core)		3
Term Hours:		15

**Spring semester**

APPL 416	Applied Lessons and Junior Recital (principal instrument)	2
APPM 299	Master Class (jazz master class)	0
APPM 360	Jazz Orchestra	1
APPM 381	Conducting	2
MHIS 312	Jazz Arranging II	3
MHIS 322	Music History II	2
MHIS 324	Jazz History	3
Term Hours:		13

**Senior year****Fall semester**

APPL 417	Applied Lessons (principal instrument)	2
APPM 299	Master Class (jazz master class)	0
APPM 361	Small Jazz Ensemble	1
MHIS 380	Survey of the Music Industry	3
MHIS 405	Jazz Form and Analysis I	3
Social/behavioral sciences course (University Core)		3
Term Hours:		12

**Spring semester**

APPL 418	Applied Lessons and Senior Recital (principal instrument)	2
APPM 299	Master Class (jazz master class)	0
APPM 3XX	Ensemble elective	1
APPM 492	Senior Project: Portfolio Review (University Core capstone)	1
General education course		6
Open elective		5
Term Hours:		15
Total Hours:		120-121

## Music, Bachelor of (B.M.) with a concentration in performance/piano

The Bachelor of Music is the initial professional degree in music. Its primary emphasis is on development of the skills, concepts and sensitivities essential to the professional life of the musician. At the center of the instructional program for this degree is the music

core curriculum, comprising 27 credits of instruction in aspects of musicianship fundamental to all music degree programs. Included are courses in music theory, aural skills, music history and conducting.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following.**

Students will:

- Demonstrate professional performance skills
- Demonstrate comprehensive musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

## Degree requirements for Music, Bachelor of (B.M.) with performance/piano concentration

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

### Additional School of the Arts requirements

Select one of the following:		3
HIST 101	Survey of European History	
HIST 102	Survey of European History	
HIST 103	Survey of American History	
HIST 104	Survey of American History	
General education courses from the College of Humanities and Sciences		9
Total Hours		12

### Major requirements

APPL 311	Applied Lessons (principal performing medium)	2
APPL 312	Applied Lessons (principal performing medium)	2
APPL 313	Applied Lessons (principal performing medium)	2
APPL 314	Applied Lessons (principal performing medium)	2
APPL 415	Applied Lessons (principal performing medium)	2
APPL 416	Applied Lessons and Junior Recital	2
APPL 417	Applied Lessons	2
APPL 418	Applied Lessons and Senior Recital (principal performing medium)	2
Take three semesters of the following:		3
APPL 320	Applied Lessons Secondary Instrument	

APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 299	Master Class (eight semesters)	0
Take two semesters of the following:		2
APPM 362	Accompanying: Piano	
APPM 373	Advanced Keyboard Skills I	1
APPM 374	Advanced Keyboard Skills II	1
APPM 381	Conducting	2
APPM 463	Pedagogy (piano)	2
APPM 492	Senior Project: Portfolio Review (capstone)	1
MHIS 120	Introduction to World Musical Styles	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
MHIS 246	Theory and Aural Skills IV	4
MHIS 303	Piano Literature	2
MHIS 304	Piano Literature	2
MHIS 305	Form and Analysis I	2
MHIS 321	Music History I	2
MHIS 322	Music History II	2
Ensemble requirement: Select two credits from the following:		2
APPM 358	Commonwealth Singers	
APPM 359	Choral Arts Society	
APPM 378	Women's Choir	
Ensemble elective: Select eight credits from the following:		8
APPM 355	Orchestra	
APPM 356	Symphonic Wind Ensemble	
APPM 357	University Band	
APPM 367	Piano Ensemble	
APPM 368	Woodwind Ensemble	
APPM 371	String Chamber Music	
Music electives		12
Select from any AMPT, APPL, APPM, ARTS, MHIS or MUED courses not otherwise required for the degree.		
Total Hours		78

## Open electives

Select nine open elective credits	9
-----------------------------------	---

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
APPL 311	Applied Lessons (piano)	2
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (piano)	0
APPM 373	Advanced Keyboard Skills I	1
APPM 3XX ensemble requirement		1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I	3

Natural/physical sciences course (University Core)		3
Term Hours:		14

### Spring semester

APPL 312	Applied Lessons (piano)	2
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (piano)	0
APPM 3XX ensemble requirement		1
MHIS 146	Theory and Aural Skills II	4
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3
Humanities/fine arts course (University Core)		3
Term Hours:		16

### Sophomore year

#### Fall semester

APPL 313	Applied Lessons (piano)	2
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (piano)	0
APPM 3XX ensemble elective		2
MHIS 120	Introduction to World Musical Styles	2
MHIS 245	Theory and Aural Skills III	4
UNIV 200	Inquiry and the Craft of Argument	3
General education course		3
Term Hours:		16

#### Spring semester

APPL 314	Applied Lessons (piano)	2
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (piano)	0
APPM 374	Advanced Keyboard Skills II	1
APPM 3XX ensemble elective		1
HIST 101	Survey of European History	3
or HIST 102	or Survey of European History	
or HIST 103	or Survey of American History	
or HIST 104	or Survey of American History	
MHIS 246	Theory and Aural Skills IV	4
Quantitative literacy course (University Core)		3
Term Hours:		14

### Junior year

#### Fall semester

APPL 415	Applied Lessons (piano)	2
APPM 299	Master Class (piano)	0
APPM 362	Accompanying: Piano	1
APPM 381	Conducting	2
APPM 3XX ensemble elective		1
MHIS 303	Piano Literature	2
or APPM 463	or Pedagogy	
MHIS 305	Form and Analysis I	2
MHIS 321	Music History I	2
General education course		3
Term Hours:		15



**Spring semester**

APPL 320	Applied Lessons Secondary Instrument	1
APPL 416	Applied Lessons and Junior Recital (piano)	2
APPM 299	Master Class (piano)	0
APPM 362	Accompanying: Piano	1
APPM 3XX	ensemble elective	1
MHIS 304	Piano Literature	2
MHIS 322	Music History II	2
Music electives		6
Term Hours:		15

**Senior year****Fall semester**

APPL 320	Applied Lessons Secondary Instrument	1
APPL 417	Applied Lessons (piano)	2
APPM 299	Master Class (piano)	0
APPM 3XX	ensemble elective	1
MHIS 303	Piano Literature	2
or APPM 463	or Pedagogy	
General education course		3
Open electives		6
Term Hours:		15

**Spring semester**

APPL 320	Applied Lessons Secondary Instrument	1
APPL 418	Applied Lessons and Senior Recital (piano)	2
APPM 299	Master Class (piano)	0
APPM 3XX	ensemble elective	2
APPM 492	Senior Project: Portfolio Review (University Core capstone)	1
Open electives		3
Music electives		6
Term Hours:		15
Total Hours:		120

## Music, Bachelor of (B.M.) with a concentration in performance/strings

The Bachelor of Music is the initial professional degree in music. Its primary emphasis is on development of the skills, concepts and sensitivities essential to the professional life of the musician. At the center of the instructional program for this degree is the music core curriculum, comprising 27 credits of instruction in aspects of musicianship fundamental to all music degree programs. Included are courses in music theory, aural skills, music history and conducting.

### Learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate professional performance skills
- Demonstrate comprehensive musicianship
- Acquire supporting competencies

- Develop artistic/intellectual mission

## Degree requirements for Music, Bachelor of (B.M.) with performance/strings concentration

### General Education requirements

**University Core Education Curriculum**

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

**Additional School of the Arts requirements**

Select one of the following:		3
HIST 101	Survey of European History	
HIST 102	Survey of European History	
HIST 103	Survey of American History	
HIST 104	Survey of American History	
General education courses from the College of Humanities and Sciences		6
Total Hours		9

### Major requirements

APPL 311	Applied Lessons (principal performing medium)	2
APPL 312	Applied Lessons (principal performing medium)	2
APPL 313	Applied Lessons (principal performing medium)	2
APPL 314	Applied Lessons (principal performing medium)	2
APPL 415	Applied Lessons (principal performing medium)	2
APPL 416	Applied Lessons and Junior Recital (principal performing medium)	2
APPL 417	Applied Lessons (principal performing medium)	2
APPL 418	Applied Lessons and Senior Recital (principal performing medium)	2
Take three semesters of the following:		3
APPL 320	Applied Lessons Secondary Instrument	
APPM 173	Keyboard Skills I	1
APPM 174	Keyboard Skills II	1
APPM 273	Keyboard Skills III	1
APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 299	Master Class (eight semesters)	0
Take eight semesters of the following:		8
APPM 355	Orchestra	
APPM 381	Conducting	2

APPM 463	Pedagogy	2
APPM 492	Senior Project: Portfolio Review (capstone)	1
MHIS 120	Introduction to World Musical Styles	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
MHIS 246	Theory and Aural Skills IV	4
MHIS 305	Form and Analysis I	2
MHIS 321	Music History I	2
MHIS 322	Music History II	2
MHIS 380	Survey of the Music Industry	3
Ensemble elective (audition may be required): Select four credits from the following:		4
APPM 367	Piano Ensemble	
APPM 368	Woodwind Ensemble	
APPM 371	String Chamber Music	
Music electives		12
Select from any AMPT, APPL, APPM, ARTS, MHIS or MUED courses not otherwise required for the degree.		
Total Hours		78

## Open electives

Select twelve open elective credits 12

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
APPL 311	Applied Lessons (principal instrument)	2
APPM 173	Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1
APPM 390	Small Ensembles (ensemble elective)	1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I	3
Natural/physical sciences course (University Core)		3
Term Hours:		15

Spring semester		Hours
APPL 312	Applied Lessons (principal instrument)	2
APPM 174	Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1
APPM 390	Small Ensembles (ensemble elective)	1
MHIS 146	Theory and Aural Skills II	4
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3
Term Hours:		15

### Sophomore year

### Fall semester

APPL 313	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 273	Keyboard Skills III	1
APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1
MHIS 120	Introduction to World Musical Styles	2
MHIS 245	Theory and Aural Skills III	4
UNIV 200	Inquiry and the Craft of Argument	3
Humanities/fine arts course (University Core)		3
Term Hours:		16

### Spring semester

APPL 314	Applied Lessons (principal instrument)	2
APPL 320	Applied Lessons Secondary Instrument	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1
APPM 390	Small Ensembles (ensemble elective)	1
HIST 101	Survey of European History	3
or HIST 102	or Survey of European History	
or HIST 103	or Survey of American History	
or HIST 104	or Survey of American History	
MHIS 246	Theory and Aural Skills IV	4
Quantitative literacy course (University Core)		3
Term Hours:		15

### Junior year

#### Fall semester

APPL 320	Applied Lessons Secondary Instrument	1
APPL 415	Applied Lessons (principal instrument)	2
APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1
APPM 381	Conducting	2
APPM 390	Small Ensembles (ensemble elective)	1
MHIS 305	Form and Analysis I	2
MHIS 321	Music History I	2
Open elective		3
Term Hours:		14

#### Spring semester

APPL 320	Applied Lessons Secondary Instrument	1
APPL 416	Applied Lessons and Junior Recital (principal instrument)	2
APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1
APPM 463	Pedagogy	2
MHIS 322	Music History II	2
Music electives		6
Term Hours:		14

### Senior year

#### Fall semester

APPL 417	Applied Lessons (principal instrument)	2
----------	--	---

APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1
MHIS 380	Survey of the Music Industry	3
General education courses		6
Music elective		3
Term Hours:		15

**Spring semester**

APPL 418	Applied Lessons and Senior Recital (principal instrument)	2
APPM 299	Master Class (principal instrument)	0
APPM 355	Orchestra	1
APPM 492	Senior Project: Portfolio Review (University Core capstone)	1
Open electives		9
Music elective		3
Term Hours:		16
Total Hours:		120

## Music, Bachelor of (B.M.) with a concentration in performance/voice

The Bachelor of Music is the initial professional degree in music. Its primary emphasis is on development of the skills, concepts and sensitivities essential to the professional life of the musician. At the center of the instructional program for this degree is the music core curriculum, comprising 27 credits of instruction in aspects of musicianship fundamental to all music degree programs. Included are courses in music theory, aural skills, music history and conducting.

### Learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate professional performance skills
- Demonstrate comprehensive musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

## Degree requirements for Music, Bachelor of (B.M.) with performance/voice concentration

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional School of the Arts requirements

Select one of the following:	3
------------------------------	---

HIST 101	Survey of European History	
HIST 102	Survey of European History	
HIST 103	Survey of American History	
HIST 104	Survey of American History	
Foreign language (Italian, French or German) 101-102		8
Total Hours		11

### Major requirements

APPL 311	Applied Lessons (principal performing medium)	2
APPL 312	Applied Lessons (principal performing medium)	2
APPL 313	Applied Lessons (principal performing medium)	2
APPL 314	Applied Lessons (principal performing medium)	2
APPL 415	Applied Lessons (principal performing medium)	2
APPL 416	Applied Lessons and Junior Recital (principal performing medium)	2
APPL 417	Applied Lessons (principal performing medium)	2
APPL 418	Applied Lessons and Senior Recital (principal performing medium)	2
Take three semesters of the following:		3
APPL 320	Applied Lessons Secondary Instrument	
APPM 161	Lyric Diction	3
APPM 162	Lyric Diction	3
APPM 173	Keyboard Skills I	1
APPM 174	Keyboard Skills II	1
APPM 273	Keyboard Skills III	1
APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 299	Master Class (eight semesters)	0
Take two semesters of the following:		2
APPM 377	Vocal Chamber Ensemble	
APPM 381	Conducting	2
APPM 385	Opera Theatre	2
APPM 463	Pedagogy (vocal)	2
APPM 492	Senior Project: Portfolio Review (capstone)	1

MHIS 120	Introduction to World Musical Styles	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
MHIS 246	Theory and Aural Skills IV	4
MHIS 321	Music History I	2
MHIS 322	Music History II	2
MHIS 465	Song Literature	2

Ensemble requirements (audition may be required): Select seven credits from the following:

APPM 358	Commonwealth Singers	
APPM 359	Choral Arts Society	
APPM 378	Women's Choir	

Ensemble elective (audition may be required): Select one credit from the ensemble requirement list or the following:	1
APPM 377 Vocal Chamber Ensemble	
Music electives:	7
Select from any AMPT, APPL, APPM, ARTS, MHIS or MUED courses not otherwise required for the degree.	
Total Hours	76

## Open electives

Select twelve open elective credits	12
-------------------------------------	----

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
APPL 311	Applied Lessons (voice)	2
APPM 161	Lyric Diction	3
APPM 173	Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble requirement	1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I	3
Quantitative literacy course (University Core)		3
Term Hours:		17
Spring semester		
APPL 312	Applied Lessons (principal instrument)	2
APPM 162	Lyric Diction	3
APPM 174	Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble requirement	1
MHIS 146	Theory and Aural Skills II	4
UNIV 112	Focused Inquiry II	3
Natural/physical sciences course (University Core)		3
Term Hours:		17

### Sophomore year

Fall semester		
APPL 313	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 273	Keyboard Skills III	1
APPM 299	Master Class (voice)	0
APPM 377	Vocal Chamber Ensemble	1
APPM 3XX	ensemble requirement	1
MHIS 120	Introduction to World Musical Styles	2
MHIS 245	Theory and Aural Skills III	4
UNIV 200	Inquiry and the Craft of Argument (University Core)	3
Term Hours:		14
Spring semester		
APPL 314	Applied Lessons (voice)	2

APPL 320	Applied Lessons Secondary Instrument	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (voice)	0
APPM 377	Vocal Chamber Ensemble	1
APPM 3XX	ensemble requirement	1
MHIS 246	Theory and Aural Skills IV	4
Humanities/fine arts course (University Core)		3
Social/behavioral sciences course (University Core)		3
Term Hours:		15

### Junior year

#### Fall semester

APPL 320	Applied Lessons Secondary Instrument	1
APPL 415	Applied Lessons (voice)	2
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble elective	1
APPM 3XX	ensemble requirement	1
APPM 381	Conducting	2
APPM 463	Pedagogy (voice)	2
MHIS 321	Music History I	2
Foreign language (GRMN, FREN or ITAL 101)		4
Term Hours:		15

#### Spring semester

APPL 320	Applied Lessons Secondary Instrument	1
APPL 416	Applied Lessons and Junior Recital (voice)	2
APPM 299	Master Class (voice)	0
APPM 3XX	ensemble requirement	1
HIST 101	Survey of European History	3
or HIST 102	or Survey of European History	
or HIST 103	or Survey of American History	
or HIST 104	or Survey of American History	
MHIS 322	Music History II	2
Foreign language (GRMN, FREN or ITAL 102)		4
Music elective		2
Term Hours:		15

### Senior year

#### Fall semester

APPL 417	Applied Lessons (voice)	2
APPM 299	Master Class (voice)	0
APPM 385	Opera Theatre	2
MHIS 465	Song Literature	2
Open elective		6
Music elective		3
Term Hours:		15

#### Spring semester

APPL 418	Applied Lessons and Senior Recital (voice)	2
APPM 299	Master Class (voice)	0
APPM 3XX	Ensemble requirement	1
APPM 492	Senior Project: Portfolio Review (University Core capstone)	1
Open electives		6

Music elective	2
Term Hours:	12
Total Hours:	120

## Music, Bachelor of (B.M.) with a concentration in performance/winds and percussion

The Bachelor of Music is the initial professional degree in music. Its primary emphasis is on development of the skills, concepts and sensitivities essential to the professional life of the musician. At the center of the instructional program for this degree is the music core curriculum, comprising 27 credits of instruction in aspects of musicianship fundamental to all music degree programs. Included are courses in music theory, aural skills, music history and conducting.

### Learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate professional performance skills
- Demonstrate comprehensive musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

## Degree requirements for Music, Bachelor of (B.M.) with performance/winds and percussion concentration

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional School of the Arts requirements

Select one of the following:		3
HIST 101	Survey of European History	
HIST 102	Survey of European History	
HIST 103	Survey of American History	
HIST 104	Survey of American History	
General education courses from the College of Humanities and Sciences		6
Total Hours		9

### Major requirements

APPL 311	Applied Lessons (principal performing medium)	2
----------	---	---

APPL 312	Applied Lessons (principal performing medium)	2
APPL 313	Applied Lessons (principal performing medium)	2
APPL 314	Applied Lessons (principal performing medium)	2
APPL 415	Applied Lessons (principal performing medium)	2
APPL 416	Applied Lessons and Junior Recital (principal performing medium)	2
APPL 417	Applied Lessons (principal performing medium)	2
APPL 418	Applied Lessons and Senior Recital (principal performing medium)	2
Take the following three semesters:		3
APPL 320	Applied Lessons Secondary Instrument	
APPM 173	Keyboard Skills I	1
APPM 174	Keyboard Skills II	1
APPM 273	Keyboard Skills III	1
APPM 199	Recital/Convocation Attendance (four semesters)	0
APPM 299	Master Class (eight semesters)	0
APPM 381	Conducting	2
APPM 463	Pedagogy	2
APPM 492	Senior Project: Portfolio Review (capstone)	1
MHIS 120	Introduction to World Musical Styles	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
MHIS 246	Theory and Aural Skills IV	4
MHIS 305	Form and Analysis I	2
MHIS 321	Music History I	2
MHIS 322	Music History II	2
MHIS 380	Survey of the Music Industry	3
Ensemble requirement (audition may be required): Select eight credits from the following:		8
APPM 355	Orchestra	
APPM 356	Symphonic Wind Ensemble	
APPM 357	University Band	
Ensemble elective (audition may be required): Select four credits from the ensemble requirements or from the following:		4
APPM 363	Flute Choir	
APPM 368	Woodwind Ensemble	
APPM 369	Percussion Ensemble	
APPM 371	String Chamber Music	
APPM 372	Brass Ensemble	
Music electives:		15
Select from any AMPT, APPL, APPM, ARTS, MHIS or MUED courses not otherwise required for the degree.		
Total Hours		81



## Open electives

Select nine open elective credits 9

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
APPL 311	Applied Lessons (principal instrument)	2
APPM 173	Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble elective	1
APPM 3XX	ensemble requirement	1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I	3
Natural/physical sciences course (University Core)		3
Term Hours:		15

### Spring semester

APPL 312	Applied Lessons (principal instrument)	2
APPM 174	Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble elective	1
APPM 3XX	ensemble requirement	1
MHIS 146	Theory and Aural Skills II	4
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3
Term Hours:		15

### Sophomore year

#### Fall semester

APPL 313	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 273	Keyboard Skills III	1
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble requirement	1
MHIS 120	Introduction to World Musical Styles	2
MHIS 245	Theory and Aural Skills III	4
UNIV 200	Inquiry and the Craft of Argument	3
Humanities/fine arts course (University Core)		3
Term Hours:		16

#### Spring semester

APPL 314	Applied Lessons (principal instrument)	2
APPL 320	Applied Lessons Secondary Instrument	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble elective	1
APPM 3XX	ensemble requirement	1

HIST 101	Survey of European History	3
or HIST 102	or Survey of European History	
or HIST 103	or Survey of American History	
or HIST 104	or Survey of American History	

MHIS 246	Theory and Aural Skills IV	4
Quantitative literacy course (University Core)		3
Term Hours:		15

### Junior year

#### Fall semester

APPL 415	Applied Lessons (principal instrument)	2
APPL 320	Applied Lessons Secondary Instrument	1
APPM 299	Master Class (principal instrument)	0
APPM 3XX	Ensemble requirement	1
APPM 381	Conducting	2
APPM 3XX	ensemble elective	1
MHIS 305	Form and Analysis I	2
MHIS 321	Music History I	2
Music elective		3
Term Hours:		14

#### Spring semester

APPL 416	Applied Lessons and Junior Recital (principal instrument)	2
APPL 320	Applied Lessons Secondary Instrument	1
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble requirement	1
APPM 463	Pedagogy	2
MHIS 322	Music History II	2
Music electives		6
Term Hours:		14

### Senior year

#### Fall semester

APPL 417	Applied Lessons (principal instrument)	2
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble requirement	1
MHIS 380	Survey of the Music Industry	3
General education courses		6
Music elective		3
Term Hours:		15

#### Spring semester

APPL 418	Applied Lessons and Senior Recital (principal instrument)	2
APPM 299	Master Class (principal instrument)	0
APPM 3XX	ensemble requirement	1
APPM 492	Senior Project: Portfolio Review (University Core capstone)	1
Open electives		9
Music elective		3
Term Hours:		16
Total Hours:		120

## Music, Bachelor of Arts (B.A.)

The Bachelor of Arts (B.A.) in Music is designed for students who want a degree that combines a breadth of general studies with a major in music. Included are courses in basic theory, aural skills, applied performance, music history and foreign language, as well as music and open electives.

### Learning outcomes

Upon completing this program, students will know and know how to do the following.

Students will:

- Demonstrate performance skills
- Demonstrate musicianship
- Acquire supporting competencies
- Develop artistic/intellectual mission

## Degree requirements for Music, Bachelor of Arts (B.A.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional School of the Arts requirements

HUMS 202	Choices in a Consumer Society	1
Foreign language through the 102 level (by course or placement)		0-8
General education courses from the College of Humanities and Sciences		9
Total Hours		10-18

### Major requirements

APPL 311	Applied Lessons (principal performing medium)	2
APPL 312	Applied Lessons (principal performing medium)	2
APPL 313	Applied Lessons (principal performing medium)	2
APPL 314	Applied Lessons (principal performing medium)	2
Select one pair of the following:		2
APPM 173 & APPM 174	Keyboard Skills I and Keyboard Skills II	
APPM 373 & APPM 374	Advanced Keyboard Skills I and Advanced Keyboard Skills II	
APPM 199	Recital/Convocation Attendance (four semesters)	0

APPM 299	Master Class (four semesters)	0
APPM 492	Senior Project: Portfolio Review (capstone)	1
MHIS 120	Introduction to World Musical Styles	2
MHIS 145	Theory and Aural Skills I	4
MHIS 146	Theory and Aural Skills II	4
MHIS 245	Theory and Aural Skills III	4
MHIS 246	Theory and Aural Skills IV	4
MHIS 321	Music History I	2
MHIS 322	Music History II	2
Ensemble requirement (audition may be required): Select six credits from the following:		6
APPM 355	Orchestra	
APPM 356	Symphonic Wind Ensemble	
APPM 357	University Band	
APPM 358	Commonwealth Singers	
APPM 359	Choral Arts Society	
APPM 360	Jazz Orchestra	
APPM 361	Small Jazz Ensemble	
APPM 363	Flute Choir	
APPM 364	Guitar Ensemble	
APPM 367	Piano Ensemble	
APPM 368	Woodwind Ensemble	
APPM 369	Percussion Ensemble	
APPM 371	String Chamber Music	
APPM 372	Brass Ensemble	
APPM 377	Vocal Chamber Ensemble	
APPM 378	Women's Choir	
Music electives		9
Select from any AMPT, APPL, APPM, ARTS, MHIS or MUED courses not otherwise required for the degree.		
Total Hours		48

### Open electives

Select 33-41 open elective credits 33-41

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
APPL 311	Applied Lessons (principal instrument)	2
APPM 173 or APPM 373	Keyboard Skills I or Advanced Keyboard Skills I	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX ensembles		1
MHIS 145	Theory and Aural Skills I	4
UNIV 111	Focused Inquiry I	3
Natural/physical science course (University Core)		3
Term Hours:		14

**Spring semester**

APPL 312	Applied Lessons (principal instrument)	2
APPM 174 or APPM 374	Keyboard Skills II or Advanced Keyboard Skills II	1
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX ensembles		1
MHIS 146	Theory and Aural Skills II	4
UNIV 112	Focused Inquiry II	3
Social/behavioral science course (University Core)		3
Term Hours:		14

**Sophomore year****Fall semester**

APPL 313	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX ensembles		1
MHIS 120	Introduction to World Musical Styles	2
MHIS 245	Theory and Aural Skills III	4
UNIV 200	Inquiry and the Craft of Argument	3
Humanities/fine arts course (University Core)		3
Term Hours:		15

**Spring semester**

APPL 314	Applied Lessons (principal instrument)	2
APPM 199	Recital/Convocation Attendance	0
APPM 299	Master Class (principal instrument)	0
APPM 3XX ensembles		1
MHIS 246	Theory and Aural Skills IV	4
Open electives		6
Quantitative literacy course (University Core)		3
Term Hours:		16

**Junior year****Fall semester**

APPM 3XX ensembles		1
MHIS 321	Music History I	2
Open electives		5-6
Foreign language course (101 level)		4
Music elective		3
Term Hours:		15-16

**Spring semester**

APPM 3XX ensembles		1
MHIS 322	Music History II	2
Open electives		5-6
Foreign language course (102 level)		4
Music elective		3
Term Hours:		15-16

**Senior year****Fall semester**

APPM 492	Senior Project: Portfolio Review	1
Open electives		12

Music electives	3
Term Hours:	16
<b>Spring semester</b>	
Open elective	15
Term Hours:	15
Total Hours:	120-122

## Music, minor in

Any VCU student may declare a minor in music with approval from the Department of Music. The music minor comprises 18 credits distributed among the areas of music history/theory, ensemble performance and applied lessons. The minor in music is fulfilled by a minimum of two semesters of study each of APPL 200 and two semesters of APPM 300-level ensemble courses toward the total 18 credits. In addition, the completed minor must contain a minimum of nine credits of music course work at the 300- or 400-level. A music faculty adviser counsels each student about the selection of appropriate courses based on the student's competence and interest. Depending on audition results and course prerequisites, students may select from the following courses to meet their minor requirements:

**Music history and theory**

MHIS 105	Introduction to Writing Music
MHIS 110	Elements of Music
MHIS 120	Introduction to World Musical Styles
MHIS 145	Theory and Aural Skills I
MHIS 146	Theory and Aural Skills II
MHIS 243	Music Appreciation
MHIS 244	Experiencing Music
MHIS 250	Introduction to African-American Music
MHIS 291	Topics in Music
MHIS 321	Music History I
MHIS 322	Music History II
MHIS 324	Jazz History
MHIS 380	Survey of the Music Industry
MHIS 420	Chamber Music Literature Through 1800
MHIS 421	Chamber Music Literature Since 1800
MHIS 422	The History of the Symphony
MHIS 423	Tone Poems and Concert Overtures
MHIS 424	History of American Musical Theatre
MHIS 425	Opera History
MHIS 491	Topics in Music

**Applied lessons <sup>1</sup>**

APPL 200	Applied Lessons (1 credit/half hour lessons - audition may be required)
----------	---

**Applied music <sup>2</sup>**

APPM 355	Orchestra
APPM 356	Symphonic Wind Ensemble
APPM 357	University Band
APPM 358	Commonwealth Singers
APPM 359	Choral Arts Society
APPM 360	Jazz Orchestra
APPM 361	Small Jazz Ensemble

APPM 362	Accompanying: Piano
APPM 363	Flute Choir
APPM 364	Guitar Ensemble
APPM 367	Piano Ensemble
APPM 368	Woodwind Ensemble
APPM 369	Percussion Ensemble
APPM 371	String Chamber Music
APPM 372	Brass Ensemble
APPM 377	Vocal Chamber Ensemble
APPM 378	Women's Choir

<sup>1</sup> One credit per half hour lesson – audition may be required.

<sup>2</sup> One credit each – audition may be required.

A 2.0 GPA is required among courses applied toward the minor. A minimum total of 18 credits is required.

## Department of Painting and Printmaking

**Christina Lindholm, Ph.D.**

Associate professor and interim chair

arts.vcu.edu/paintingprintmaking (<http://arts.vcu.edu/paintingprintmaking>)

The Department of Painting and Printmaking offers an undergraduate program that earns a Bachelor of Fine Arts in Painting and Printmaking, as well as a graduate program of study that leads to the Master of Fine Arts in Fine Arts. Students admitted to the programs are expected to have a high level of competence in either painting or printmaking. The graduate program is designed to encourage the development of professional attitudes and skills, with an emphasis on individual investigation.

The department is housed in the Fine Arts Building with 15 individual graduate studios plus a large graduate printmaking area in addition four state-of-the-art undergraduate printmaking studios: etching, lithography, screenprinting and digital. These new facilities provide an excellent physical environment for the programs with easy access to the other fine art areas of sculpture and crafts. Established in 1928, the Department of Painting and Printmaking was the first department in what has become the School of the Arts. For nearly 70 years, the department has made significant contributions to the development of the School of the Arts' reputation as one of the premier art schools in the country.

The department supports an active and ambitious program of visiting artists and lecturers. Leading figures in the world of contemporary art visit to discuss their work, critique, visit studios, conduct workshops and meet with students throughout the year.

The Master of Fine Arts degree is the terminal degree in the studio areas of fine arts and is a requirement for most college and university teaching positions. Many graduate students have gained teaching experience in the department as part of their assistantship responsibilities, teaching classes in painting, drawing and printmaking. The department assists graduate students financially through a variety of teaching assistantships, graduate assistantships and scholarships.

- Painting and Printmaking, Bachelor of Fine Arts (B.F.A.) (p. 326)
- Painting and printmaking, minor in (p. 328)

## Painting and Printmaking, Bachelor of Fine Arts (B.F.A.)

Faculty and students in the Department of Painting and Printmaking work together in a professional and creative learning environment. The undergraduate curriculum enables students to adopt a specialized focus within the discipline and use elective options to pursue other areas of interest in the School of the Arts, the university and the community. It also permits students to tailor a course of study suited to their professional and personal ambitions. The undergraduate program provides students with opportunities for concentrated experiences in both practice and theory as a foundation for independent exploration and artistic development. Classroom discussions invite students to examine a range of contemporary critical issues, which enable them to understand their own studio work in relation to historical continuum. As students develop their skills in critical analysis they are challenged to articulate and justify their ideas both visually and verbally.

The size and diversity of the faculty guarantee exposure to a plurality of ideas and stylistic approaches. In addition, the department's visiting artist program brings to campus leading figures in the world of contemporary art for discussions of their work, critiques of student work and workshops.

### Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Students are expected to achieve technical proficiency in painting and printmaking, and possess the skill to translate their creative ideas through studio practice.
- Students are expected to develop personal voices as artists based on an awareness of social, historical and critical issues.
- Students have the ability to think critically and to articulate their ideas via conversation, public speaking and writing.
- Students comprehend the potential impact of contemporary art on culture.

### Special requirements

- Open electives: The 13 credits required in this area may be either academic (lecture) or studio, but eight credits must be taken outside of the Department of Painting and Printmaking.
- Studio courses are designed to be taken in the following sequence: 200 level (basic), 300 level (intermediate) and 400 level (advanced). Instructors may ask you to withdraw from a course if you lack the appropriate background of knowledge and experience.

## Degree requirements for Painting and Printmaking, Bachelor of Fine Arts (B.F.A.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4

Approved social/behavioral sciences	3-4
Total Hours	21-24

#### Additional General Education requirements

General Education electives	9
Total Hours	9

### Collateral requirements

#### Art Foundation Program

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	2

#### Art history

ARTH 103	Survey of Art I	6
& ARTH 104	and Survey of Art II	
Art history electives		9
Total Hours		29

### Major requirements

PAPR 201	Painting From Observation	4
PAPR 211	Print Media I	4
PAPR 231	Drawing from Observation	4
PAPR 290	Concepts and Issues	2
PAPR 301	Painting Strategies	4
or PAPR 311	Print Media II	
PAPR 304	Paint Practice and Theory	4
or PAPR 314	Print Practice and Theory	
PAPR 402	Senior Degree Project	4
PAPR 490	Senior Seminar	2
PAPR 300- or 400-level (painting, printmaking or drawing)		12
Total Hours		40

### Electives

Select 13 elective credits	13
Total Hours	13

### Studio electives

Select eight studio elective credits (must be taken outside of the Department of Painting and Printmaking) <sup>1</sup>	8
Total Hours	8

<sup>1</sup> Note: Studio courses outside of the Department of Painting and Printmaking include COAR, CRAF, SCPT, KINE, PHTO, GDES and CINE.

### Total minimum requirement 120 credits

#### Electives

##### PAPR 300-level intermediate printmaking

PAPR 309	Electronic Strategies	4
PAPR 311	Print Media II	4
PAPR 319	Printmaking, Intermediate (Screenprinting)	4

##### PAPR 400-level advanced printmaking

PAPR 409	Large Format Digital Printing	4
PAPR 412	Printmaking, Advanced (Lithography)	3
PAPR 413	Printmaking, Advanced (Etching)	3

##### PAPR 300-level

PAPR 309	Electronic Strategies	4
PAPR 319	Printmaking, Intermediate (Screenprinting)	4
PAPR 326	Color	3
PAPR 329	Life Drawing	3
PAPR 330	Figure Painting	4
PAPR 355	Drawing and Painting, Intermediate	3
PAPR 356	Drawing and Painting, Intermediate	3
PAPR 392	Independent Study in Painting and Printmaking	1-4

##### PAPR 400-level

PAPR 412	Printmaking, Advanced (Lithography)	3
PAPR 413	Printmaking, Advanced (Etching)	3
PAPR 415	Printmaking, Advanced (Etching)	4
PAPR 423	Experimental Printmaking	4
PAPR 491	Topics in Painting and Printmaking	1-4
PAPR 492	Independent Study in Painting and Printmaking	1-4

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester	Hours
ARTF 131 Drawing Studio	3
ARTF 132 Surface Research	3
ARTF 139 Project	1
ARTH 103 Survey of Art I	3
UNIV 111 Focused Inquiry I	3
Quantitative literacy course (University Core)	3
Term Hours:	16

#### Spring semester

ARTF 133 Space Research	3
ARTF 134 Time Studio	3
ARTF 139 Project	1
ARTH 104 Survey of Art II	3
UNIV 112 Focused Inquiry II	3
Social/behavioral sciences course (University Core)	3
Term Hours:	16

#### Sophomore year

Fall semester	Hours
PAPR 201 Painting From Observation	4
PAPR 231 Drawing from Observation	4
PAPR 290 Concepts and Issues	2
UNIV 200 Inquiry and the Craft of Argument	3
Art history elective	3
Term Hours:	16

#### Spring semester

PAPR 211 Print Media I	4
------------------------	---



PAPR 301 Painting Strategies or PAPR or Print Media II 311	4
General education elective	3
Natural/physical sciences course (University Core)	3
Term Hours:	14
<b>Junior year</b>	
<b>Fall semester</b>	
PAPR 331 Experiments in Drawing	4
PAPR 300- or 400-level elective	4
Art history elective	3
Humanities/fine arts course (University Core)	3
Studio elective (outside of the Department of Painting and Printmaking)	3
Term Hours:	17
<b>Spring semester</b>	
PAPR 304 Paint Practice and Theory	4
General education elective	3
Studio elective (outside of the Department of Painting and Printmaking)	4
Term Hours:	11
<b>Senior year</b>	
<b>Fall semester</b>	
PAPR 490 Senior Seminar (capstone)	2
PAPR 300- or 400-level drawing	4
PAPR 300- or 400-level painting	4
Art history elective	3
General education elective	3
Term Hours:	16
<b>Spring semester</b>	
PAPR 402 Senior Degree Project	4
PAPR 300- or 400-level painting or printmaking	4
Art history elective	3
Studio elective (outside of the Department of Painting and Printmaking)	3
Term Hours:	14
Total Hours:	120

## Painting and printmaking, minor in

Successful completion of the Art Foundation Program is a prerequisite for the minor, which consists of the following:

Select at least nine credits in any painting and printmaking courses	9
Select at least nine credits in upper-level painting and printmaking courses	9
Total Hours	18

## Department of Photography and Film

**Sasha Waters Freyer**

Associate professor and chair

[arts.vcu.edu/photofilm](http://arts.vcu.edu/photofilm) (<http://arts.vcu.edu/photofilm>)

The Department of Photography and Film aims to facilitate a comprehensive artistic, technical and intellectual understanding and use of the mediums of photography and film; to provide a rigorous education in the arts, specifically in photographic and moving image media, and a broad education in other academic subjects; to foster a climate that inspires creativity, intellectual curiosity, freedom of expression and critical-thinking. The department fosters a pluralistic approach that allows both faculty and students to expand the traditional boundaries of the respective media and engage in multidisciplinary practice.

The department offers undergraduate concentrations in photography and filmmaking resulting in a Bachelor of Fine Arts in Photography and Film, as well as a graduate program that leads to a Master of Fine Arts in Fine Arts with a concentration in photography and film.

To promote student development and research of contemporary art practice and theory, the Department of Photography and Film presents a diverse and active visiting artist program. Through lectures, critiques and research courses, students are exposed to the valuable insights of respected international artists, scholars and critics. In addition, the visiting artists teach topics courses exploring the current artistic and conceptual foundations found in their own work. Graduate students are encouraged to establish an individual critical dialogue with the visiting artists and faculty and attain a strong critical and historical basis for their work.

The facilities include several critique and screening rooms; a large black-and-white darkroom; a large state-of-the-art digital photography and film editing lab; a shooting studio; a student checkout center with a wide range of still photography and film cameras, professional lights and sound recording equipment; a professionally staffed graphics lab located in the same building that provides student with digital services on several high-tech imaging devices; and individual graduate M.F.A. studios.

- Photography and Film, Bachelor of Fine Arts (B.F.A.) with a concentration in:
  - Filmmaking (p. 328)
  - Photography (p. 330)

## Photography and Film, Bachelor of Fine Arts (B.F.A.) with a concentration in filmmaking

The Department of Photography and Film offers a variety of basic, intermediate and advanced photography and filmmaking classes leading to a Bachelor of Fine Arts in Photography and Film.

The program provides students with the ability to intelligently express, investigate or document using photography and/or film and to interpret meaning in still and moving images. Emphasis is placed on photography and film as contemporary fine arts. The department promotes a fundamental and effective philosophy that students maintain creative freedom, have access to resources and are enrolled in courses in which they can refine their voices and skills through traditional and contemporary media, tools and professional working methods.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Clearly recall a functional knowledge of the history and theory of photography
- Assess contemporary issues within the context of photography and related media
- Effectively communicate, visually, orally and in writing, a range of ideas and emotions for a broad range of purposes and audiences
- Demonstrate proficiency in basic to advanced photographic tools and techniques
- Demonstrate broad knowledge of current business practices of professional photographic artists
- Meet all of the objectives associated with the Photography, Bachelor of Fine Arts (B.F.A.) degree program

## Special requirements

While in the program, students must earn a minimum grade of C in each departmental course. Students who fail to meet this requirement may be asked to change their major.

## Degree requirements for Photography and Film, Bachelor of Fine Arts (B.F.A) with a concentration in filmmaking

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional School of the Arts requirements

ENGL 215	Textual Analysis	3
General education electives		6
Total Hours		9

## Collateral requirements

#### Art Foundation Program

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	2

#### Art history

ARTH 103 & ARTH 104	Survey of Art I and Survey of Art II	6
ARTH 270 & ARTH 271	History of the Motion Picture I and History of the Motion Picture II	6
ARTH 374 or ARTH 370	Studies in Film History of Animated Film	3

Studio art electives		7
Total Hours		36

## Major requirements

PHTO 260	Experiments in Sequencing	3
PHTO 275	Film as Material	3
PHTO 280	Moving Pixels	3
PHTO 281	Digital Imaging I	3
PHTO 295	Revolutionary Cinema	3
PHTO 350	Concepts I	3
PHTO 361	Sound and Color	3
PHTO 377	The Film Image	3
PHTO 390	Writing for the Screen	3
PHTO 394	Documentary I	3
PHTO 436	Senior Suitcase	3
PHTO 475	Advanced Production Workshop	3
PHTO 484 & PHTO 485	Thesis Film I and Thesis Film II	6
PHTO 494	Documentary II	3
Total Hours		45

## Open electives

Select nine open elective credits	9
-----------------------------------	---

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 134	Time Studio	3
ARTF 139	Project	1
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I	3
Quantitative literacy course (University Core)		3
Term Hours:		16

### Spring semester

ARTF 132	Surface Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	1
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3
Term Hours:		16

### Sophomore year

Fall semester		
ARTH 270	History of the Motion Picture I	3
PHTO 275	Film as Material	3
PHTO 280	Moving Pixels	3
PHTO 281	Digital Imaging I	3
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		15

### Spring semester

ARTH 271	History of the Motion Picture II	3
----------	----------------------------------	---

PHTO 260	Experiments in Sequencing	3
PHTO 295	Revolutionary Cinema	3
PHTO 377	The Film Image	3
Natural/physical sciences course (University Core)		3
Term Hours:		15

**Junior year****Fall semester**

PHTO 350	Concepts I	3
PHTO 390	Writing for the Screen	3
Humanities/fine arts course (University Core)		3
Studio arts elective		4
Open elective		3
Term Hours:		16

**Spring semester**

PHTO 361	Sound and Color	3
PHTO 394	Documentary I	3
PHTO 475	Advanced Production Workshop	3
General education elective		3
Open elective		3
Term Hours:		15

**Senior year****Fall semester**

ARTH 374	Studies in Film	3
ENGL 215	Textual Analysis	3
PHTO 436	Senior Suitcase	3
PHTO 484	Thesis Film I	3
PHTO 494	Documentary II	3
Term Hours:		15

**Spring semester**

PHTO 485	Thesis Film II	3
General education elective		3
Open elective		3
Studio art elective		3
Term Hours:		12
Total Hours:		120

## Photography and Film, Bachelor of Fine Arts (B.F.A) with a concentration in photography

The Department of Photography and Film offers a variety of basic, intermediate and advanced photography and filmmaking classes leading to a Bachelor of Fine Arts in Photography and Film.

The program provides students with the ability to intelligently express, investigate or document using photography and/or film and to interpret meaning in still and moving images. Emphasis is placed on photography and film as contemporary fine arts. The department promotes a fundamental and effective philosophy that students maintain creative freedom, have access to resources and are enrolled in courses in which they can refine their voices and skills through traditional and contemporary media, tools and professional working methods.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Clearly recall a functional knowledge of the history and theory of photography
- Assess contemporary issues within the context of photography and related media
- Effectively communicate, visually, orally and in writing, a range of ideas and emotions for a broad range of purposes and audiences
- Demonstrate proficiency in basic to advanced photographic tools and techniques
- Demonstrate broad knowledge of current business practices of professional photographic artists
- Meet all of the objectives associated with the Photography, Bachelor of Fine Arts (B.F.A.) degree program

## Special requirements

While in the program, students must earn a minimum grade of C in each departmental course. Students who fail to meet these requirements may be asked to change their major.

## Degree requirements for Photography and Film, Bachelor of Fine Arts (B.F.A) with a concentration in photography

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional School of the Arts requirements

ENGL 215	Textual Analysis	3
General education electives		6
Total Hours		9

## Collateral requirements

### Art Foundation Program

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	2

### Art history

ARTH 103	Survey of Art I	6
& ARTH 104	and Survey of Art II	
Select one of the following:		3
ARTH 270	History of the Motion Picture I	
ARTH 271	History of the Motion Picture II	

ARTH 370	History of Animated Film	
ARTH 372	History of Photography	3
<b>School of the Arts elective</b>		3
<b>Studio art electives</b>		7
Total Hours		36

## Major requirements

PHTO 243	Darkroom	3
PHTO 260	Experiments in Sequencing	3
PHTO 280	Moving Pixels	3
PHTO 281	Digital Imaging I	3
PHTO 307	Processes and Techniques	3
PHTO 340	Lighting I: Studio	3
PHTO 350	Concepts I	3
PHTO 352	Concepts II: Junior Project	3
PHTO 381	Digital Imaging II	3
PHTO 420 & PHTO 421	Senior Thesis I and Senior Thesis II	6
PHTO 435	Professional Practice	3
PHTO 442	Lighting II: Location	3
PHTO 474	Contemporary Critical Perspectives	3
Total Hours		42

## Open electives

Select 12 open elective credits	12
---------------------------------	----

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 134	Time Studio	3
ARTF 139	Project	1
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I	3
Quantitative literacy course (University Core)		3
Term Hours:		16

### Spring semester

ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 139	Project	1
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3
Term Hours:		16

### Sophomore year

Fall semester		Hours
ARTH 270	History of the Motion Picture I	3
PHTO 243	Darkroom	3
PHTO 280	Moving Pixels	3

PHTO 281	Digital Imaging I	3
Natural/physical sciences course (University Core)		3
Term Hours:		15

### Spring semester

PHTO 260	Experiments in Sequencing	3
PHTO 307	Processes and Techniques	3
UNIV 200	Inquiry and the Craft of Argument	3
Humanities/fine arts course (University Core)		3
School of the Arts elective		3
Term Hours:		15

### Junior year

#### Fall semester

ARTH 372	History of Photography	3
PHTO 340	Lighting I: Studio	3
PHTO 350	Concepts I	3
PHTO 381	Digital Imaging II	3
Studio art elective		4
Term Hours:		16

#### Spring semester

ENGL 215	Textual Analysis	3
PHTO 352	Concepts II: Junior Project	3
PHTO 442	Lighting II: Location	3
General education elective		3
Open elective		3
Term Hours:		15

### Senior year

#### Fall semester

PHTO 420	Senior Thesis I	3
PHTO 435	Professional Practice	3
PHTO 474	Contemporary Critical Perspectives	3
General education elective		3
Open elective		3
Term Hours:		15

#### Spring semester

PHTO 421	Senior Thesis II	3
Open electives		6
Studio art elective		3
Term Hours:		12
Total Hours:		120

## Department of Sculpture and Extended Media

### Matt King

Associate professor and chair

[arts.vcu.edu/sculpture](http://arts.vcu.edu/sculpture) (<http://arts.vcu.edu/sculpture>)

The Department of Sculpture and Extended Media's eight full-time faculty members and various part-time and technical faculty represent a spectrum of directions and philosophical attitudes. Faculty interests range from formal to conceptual, from the concrete to the evanescent. This breadth of interests is presented to students and contributes to the comprehensive nature of our department. Students are not only exposed

to traditional sculpture media, but encouraged to explore technology's parameters and to pursue interdisciplinary activity.

We encourage sculpture students to broaden their experience in other areas. By promoting a curriculum that encourages students to take a wide range of courses throughout the university, we stress links between art, science, the humanities and the world. As a consequence, sculpture students have rich, productive associations with professors in many fields.

Sculpture students are challenged to exploit their full potential by questioning notions of contemporary art. Our goal is to provide students with the vocabulary, the seeds of discernment and the skills of both analysis and synthesis in order to become participants in the dialogue of our time. All of this takes place in an environment of high expectation regarding self-motivation, intellectual capacity and responsibility.

The sculpture program is housed in a state-of-the-art facility. Sculpture majors are provided with semi-private, locked studio spaces and are given time, support and encouragement to pursue their independently determined goals.

- Sculpture, Bachelor of Fine Arts (B.F.A.) (p. 332)
- Sculpture, minor in (p. 333)

## Sculpture, Bachelor of Fine Arts (B.F.A.)

The Department of Sculpture and Extended Media is a heterogeneous group of students and artists/teachers. Together, we examine the fundamental, philosophical, critical, technical, and historical components of art. We do so with an eye toward developing and advancing the discipline of sculpture in its broadest and most inclusive terms within an atmosphere of mutual respect.

Our charge is to create an environment of speculation and high expectation regarding self-motivation, intellectual capacity, and responsibility in order to establish conditions that promote student's ability to construct a thinking self. It is to explore and grow with technology's parameters in the process of discovering applications to new modes of expression. It is to stress the links between art, science, the humanities, emerging philosophies and the conditions of an ever-changing world. And it is to provide students with tools of discernment, vocabulary, and the skills of analysis and synthesis to become participants in the critical dialogues of our age.

Within this context, students strive to measure up to the best performances modeled for them by history, by their peers and by faculty engaged in vital research.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Students will be proficient in the use of equipment, techniques and resources.
- Students will be able to participate in dialogue of contemporary art.
- Students will be able to utilize professional practices in the field of the arts.

## Special requirements

Successful completion of the Art Foundation curriculum is required before continuing in the Department of Sculpture and Extended Media.

## Degree requirements for Sculpture, Bachelor of Fine Arts (B.F.A.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional School of the Arts requirements

ENGL 215	Textual Analysis	3
General education electives (Select from approved University Core courses)		6
Total Hours		9

### Collateral requirements

#### Art Foundation Program

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	2
ARTH 103	Survey of Art I	3
ARTH 104	Survey of Art II	3

#### Art history

Art history (200-level)		3
Art history (300-level or above)		6
Non-SCPT studio electives (200-level or higher)		8
Select from 200-level or higher from COAR, CRAF, DANC, FASH, GDES, IDES, KINE, APPM/MHIS, PAPR, PHTO or THEA		
Non-SCPT studio electives (300-level or higher)		6
Select from 300-level or higher from COAR, CRAF, DANC, FASH, GDES, IDES, KINE, APPM/MHIS, PAPR, PHTO or THEA.		
Total Hours		43

### Major requirements

SCPT 211	Basic Sculpture I	4
SCPT 212	Basic Sculpture II	4
SCPT 215	Sophomore Seminar	2
SCPT 311 & SCPT 312	Intermediate Sculpture and Intermediate Sculpture	8
SCPT 411 & SCPT 412	Advanced Sculpture and Advanced Sculpture	8



SCPT 415	Senior Seminar	2
Directed sculpture elective		4
Directed upper-level SCPT course		4
Total Hours		36
Open electives		11

## Total 120 credits

### Electives

#### Directed sculpture electives

SCPT 290	Concepts and Issues	2
SCPT 321	Figure Modeling	3
SCPT 322	Flexible Molds	3
SCPT 323	Foundry	4
SCPT 324	Robotics for Sculpture	4
SCPT 480	Critical Issues	4
SCPT 491	Topics in Sculpture	1-4
SCPT 591	Topics in Sculpture	1-4

#### Directed upper-level sculpture courses

SCPT 323	Foundry	4
SCPT 324	Robotics for Sculpture	4
SCPT 411	Advanced Sculpture	4
SCPT 412	Advanced Sculpture	4
SCPT 417	Seminar in Contemporary Sculpture	4
SCPT 480	Critical Issues	4

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
ARTF 131	Drawing Studio	3
ARTF 133	Space Research	3
ARTF 139	Project	1
ARTH 103	Survey of Art I	3
UNIV 111	Focused Inquiry I	3
University Core Curriculum Tier II		3
Term Hours:		16

### Spring semester

ARTF 132	Surface Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	1
ARTH 104	Survey of Art II	3
UNIV 112	Focused Inquiry II	3
University Core Curriculum Tier II		3
Term Hours:		16

### Sophomore year

Fall semester		
SCPT 211	Basic Sculpture I	4
SCPT 215	Sophomore Seminar	2
UNIV 200	Inquiry and the Craft of Argument	3
Art history (200 level)		3

University Core Curriculum Tier II	3
Term Hours:	15

### Spring semester

ENGL 215	Textual Analysis	3
SCPT 212	Basic Sculpture II	4
Directed sculpture elective		4
Non-SCPT studio elective <sup>1</sup>		4
Term Hours:		15

### Junior year

#### Fall semester

SCPT 311	Intermediate Sculpture	4
Art history (300 or 400 level)		3
Non-SCPT studio elective <sup>1</sup>		4
University Core Curriculum Tier II		3
Term Hours:		14

#### Spring semester

SCPT 312	Intermediate Sculpture	4
Art history (300 or 400 level)		3
Literature (300 or 400 level)		3
Non-SCPT studio elective <sup>2</sup>		3
Open elective		3
Term Hours:		16

### Senior year

#### Fall semester

SCPT 411	Advanced Sculpture	4
SCPT 415	Senior Seminar	2
Non-SCPT studio elective <sup>2</sup>		3
Open electives		7
Term Hours:		16

#### Spring semester

SCPT 412	Advanced Sculpture	4
Directed upper-level SCPT course		4
Open elective		4
Term Hours:		12
Total Hours:		120

<sup>1</sup> 200-level or higher from COAR, CRAF, DANC, FASH, GDES, IDES, KINE, APPM/MHIS/MUSC, PAPR, PHTO, THEA.

<sup>2</sup> 300-level or higher from: COAR, CRAF, DANC, FASH, GDES, IDES, KINE, APPM/MHIS/MUSC, PAPR, PHTO, THEA

## Sculpture, minor in

Successful completion of the Art Foundation Program is a prerequisite for the minor in sculpture. The minor consists of a minimum of 18 credits and must include the following courses, in order:

SCPT 211	Basic Sculpture I	4
SCPT 212	Basic Sculpture II	4
SCPT 311	Intermediate Sculpture	4
or SCPT 312	Intermediate Sculpture	
SCPT 411	Advanced Sculpture	4
or SCPT 412	Advanced Sculpture	

SCPT upper-level	2-4
Total Hours	18-20

## Department of Theatre

### Ron Keller

Professor and interim chair

[arts.vcu.edu/theatre](http://arts.vcu.edu/theatre) (<http://arts.vcu.edu/theatre>)

The mission of the Department of Theatre is to educate and train students as theatre professionals and/or academicians in the field of performance, design/technology or theatre pedagogy.

In fulfilling its mission, the Department of Theatre provides students with the professional and cultural foundations essential for achieving the highest standards of the art. The department offers three degrees — a Bachelor of Arts, a Bachelor of Fine Arts and a Master of Fine Arts — to which applicants are admitted based on demonstration of ability, genuine interest determined during an interview, and audition and/or portfolio presentation.

In addition to introductory theatre and acting courses for non-majors, the department also serves students throughout the university with offerings in speech communication.

The Department of Theatre employs 23 faculty and staff and enrolls 230 undergraduate and 40 to 50 full-time graduate students. Theatre VCU produces four mainstage productions and numerous graduate and undergraduate directing projects each year.

- Theatre, Bachelor of Arts (B.A.) (p. 334)
- Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in:
  - Costume design/technical production (p. 336)
  - Lighting design/technical production (p. 337)
  - Performance (p. 339)
  - Scene design/technical production (p. 341)
  - Stage management/technical production (p. 343)

## Theatre, Bachelor of Arts (B.A.)

The department offers a Bachelor of Arts in Theatre that may be entered into during the third year. All freshman and transfer students entering the Department of Theatre are initially classified as Theatre Foundation students. After successfully completing the first two years of core theatre courses in their foundation areas of emphasis, students apply for admission into a specific degree program (B.F.A. or B.A.) in theatre. The B.A. is designed for students who want a program with a strong emphasis in theatre combined with a strong liberal arts component, and a minor (or other course of directed study) in an area other than theatre.

Student participation in both credit- and noncredit-bearing department activities will be required. Students matriculating in School of the Arts degree programs are bound by the policies and procedures stipulated in this bulletin and in any other current handbook or policy document adopted by the individual programs.

Because of the environment that exists in the Department of Theatre, all aspects of theatre as art, craft, business and education are experienced together. The curriculum immerses students in the practicalities of theatre. Throughout the four years, students work with voice, body and imagination; this practical application, combined with a strong liberal arts component and a minor (or course of directed study), offers a wide field of academic and human experience.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Demonstrate successful application of theatrical knowledge
- Demonstrate successful application of liberal arts knowledge
- Demonstrate successful application of performance and design skills

## Degree requirements for Theatre, Bachelor of Arts (B.A.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional School of the Arts requirements

Approved General Education electives		9
Total Hours		9

### Collateral requirements

ENGL 401	Shakespeare (Other play-related course or 300-level ENGL course)	3
Foreign language		6
Electives (minor or directed course of study)		18
Total Hours		27

### Major requirements

THEA 103	Stagecraft	3
THEA 104	Costume Construction	3
THEA 113	Introduction to Acting I	3
THEA 114	Introduction to Acting II	3
or SPCH 121	Effective Speech	
Select one of the following:		6
THEA 201 & THEA 202	Voice and Speech for the Actor I and Voice and Speech for the Actor II	
Art Foundation, design, stage management or theatre practicum elective equivalent		
Select one of the following:		6
THEA 203 & THEA 204	Movement for the Actor I and Movement for the Actor II	

Art Foundation, design or stage management elective equivalent	
THEA 211 Introduction to Drama	3
Select one of the following:	6
THEA 213 Acting I & THEA 214 and Acting II	
Art Foundation, design or stage management elective equivalent	
Select one of the following:	3
THEA 221 Introduction to Scene Design	
THEA 227 Introduction to Theatrical Makeup	
THEA 228 Introduction to Costume Design	
THEA 229 Introduction to Lighting Design	
THEA 307 History of the Theatre & THEA 308 and History of the Theatre	6
Select one of the following:	3
THEA/AFAM 303 Black Theatre	
THEA 403 History of Dramatic Literature	
THEA 404 History of Dramatic Literature	
THEA 423 Modern Drama	
THEA 424 Modern Drama	
THEA 415 The Business of Theatre	4
THEA electives (300- or 400-level)	6
Total Hours	55

## Open electives

Select eight open elective credits (300- or 400-level)	8
--	---

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester	Hours
THEA 103 Stagecraft	3
THEA 113 Introduction to Acting I	3
THEA 211 Introduction to Drama	3
UNIV 111 Focused Inquiry I	3
Humanities/fine arts course (University Core)	3
Term Hours:	15

### Spring semester

THEA 104 Costume Construction	3
THEA 114 Introduction to Acting II	3
UNIV 112 Focused Inquiry II	3
Approved General Education elective	3
Social/behavioral sciences course (University Core)	3
Term Hours:	15

### Sophomore year

Fall semester	Hours
THEA 201 Voice and Speech for the Actor I	3
THEA 203 Movement for the Actor I	3
THEA 213 Acting I	3
THEA 227 Introduction to Theatrical Makeup	3

UNIV 200 Inquiry and the Craft of Argument	3
Term Hours:	15

### Spring semester

THEA 202 Voice and Speech for the Actor II	3
THEA 204 Movement for the Actor II	3
THEA 214 Acting II	3
Natural/physical sciences course (University Core)	3
Quantitative literacy course (University Core)	3
Term Hours:	15

### Junior year

#### Fall semester

ENGL 401 Shakespearean play-reading course or English (300-level) course	3
THEA 307 History of the Theatre	3
THEA elective (300- or 400-level)	3
Directed elective from the College of Humanities and Sciences (pre-requisites may apply)	3
Elective (minor or directed course of study)	3
Term Hours:	15

#### Spring semester

THEA 308 History of the Theatre	3
Directed elective from the College of Humanities and Sciences (pre-requisites may apply)	3
Elective (minor or directed course of study)	6
Foreign language	3
Term Hours:	15

### Senior year

#### Fall semester

THEA 303 Black Theatre or AFAM 303 or History of Dramatic Literature or THEA 403 or History of Dramatic Literature or THEA 404 or Modern Drama or THEA 423 or Modern Drama or THEA 424	3
THEA elective (300- or 400-level)	3
Elective (minor or directed course of study)	3
Foreign language	3
Open electives	4
Term Hours:	16

#### Spring semester

THEA 415 The Business of Theatre	4
Electives (minor or directed course of study)	6
Open electives	4
Term Hours:	14
Total Hours:	120

## Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in costume design/ technical production

The Department of Theatre offers a Bachelor of Fine Arts in Theatre that may be entered into during the third year. All freshman and transfer students entering the department are initially classified as Theatre Foundation students. After successfully completing the first two years of core theatre courses in their foundation areas of emphasis, students apply for admission to a specific degree program (B.F.A. or B.A.). The department offers B.F.A. concentration areas in performance and stage management; as well as three areas of design/technology: scenic, lighting and costume. (See the individual specialization/concentration pages for curricula outlines.)

Student participation in both credit- and noncredit-bearing department activities may be required. Students matriculating in School of the Arts degree programs are bound by the policies and procedures stipulated in this bulletin and in any other current handbook or policy document adopted by the individual programs.

Because of the environment that exists in these preprofessional programs, all aspects of theatre as art, craft, business and education are experienced together. The curriculum immerses students in the practicalities of theatre. Throughout the four years, the performer works daily with voice, body and imagination, while the designer/technician is involved in studio classes and practical application. Prospective theatre educators engage in intensive teacher-training activities that lead to certification.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate skills and techniques needed to enter the profession as a costume designer/technician
- Demonstrate knowledge of history, theory and literature and their practical application

## Degree requirements for Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in costume design/technical production

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional School of the Arts requirements

Approved General Education electives		9
Total Hours		9

### Collateral requirements

THEA 103	Stagecraft	3
THEA 113	Introduction to Acting I	3
THEA 161	Figure Drawing: Superficial Anatomy	2
THEA 162	Figure Drawing: Draping the Human Form	2
THEA 211	Introduction to Drama	3
THEA 221	Introduction to Scene Design	3
THEA 229	Introduction to Lighting Design	3
THEA 261	Figure Drawing: Media and Technique	2
THEA 262	Figure Drawing: Advanced Media and Technique	2
Select one of the following:		3
THEA/AFAM 303	Black Theatre	
THEA 403	History of Dramatic Literature	
THEA 404	History of Dramatic Literature	
THEA 423	Modern Drama	
THEA 424	Modern Drama	
THEA 307 & THEA 308	History of the Theatre and History of the Theatre	6
Total Hours		32

### Major requirements

THEA 104	Costume Construction	3
THEA 105	Advanced Costume Construction	3
THEA 227	Introduction to Theatrical Makeup	3
THEA 228	Introduction to Costume Design	3
THEA 309 & THEA 310	History of Costumes and History of Costumes	6
THEA 321	Costume Design Studio I	3
THEA 322	Costume Design Studio II	3
THEA 329	Patternmaking for the Theatre	3
THEA 331	Production	3
THEA 332	Draping for the Theatre	3
THEA 421 or THEA 469	Advanced Costume Design Studio I Advanced Patterning Techniques III	3
THEA 422 or THEA 470	Advanced Costume Design Studio II Advanced Patterning Techniques IV	3
THEA 430	Production	3
THEA 439	Advanced Patterning Techniques I	3
THEA 442	Advanced Patterning Techniques II	3
THEA 495	Senior Project: Portfolio Review	1
Total Hours		49

### Electives

Select three open elective credits		3
Select six elective credits (directed course of study)		6
Total Hours		9

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester			Hours
THEA 104	Costume Construction		3
THEA 113	Introduction to Acting I		3
THEA 161	Figure Drawing: Superficial Anatomy		2
THEA 211	Introduction to Drama		3
UNIV 111	Focused Inquiry I		3
Natural/physical sciences course (University Core)			3-4

Term Hours: 17-18

### Spring semester

THEA 103	Stagecraft	3
THEA 105	Advanced Costume Construction	3
THEA 162	Figure Drawing: Draping the Human Form	2
UNIV 112	Focused Inquiry II	3
Quantitative literacy course (University Core)		3
General Education elective		3

Term Hours: 17

### Sophomore year

Fall semester			
THEA	227	Introduction to Theatrical Makeup	3
THEA	261	Figure Drawing: Media and Technique	2
THEA	309	History of Costumes	3
THEA	329	Patternmaking for the Theatre	3
General Education elective			3

Term Hours: 14

### Spring semester

THEA	228	Introduction to Costume Design	3
THEA	262	Figure Drawing: Advanced Media and Technique	2
THEA	310	History of Costumes	3
THEA	332	Draping for the Theatre	3
UNIV	200	Inquiry and the Craft of Argument	3
General Education elective			3

Term Hours: 17

### Junior year

Fall semester			
THEA	221	Introduction to Scene Design	3
THEA	307	History of the Theatre	3
THEA	321	Costume Design Studio I	3
THEA	331	Production	3
THEA	439	Advanced Patterning Techniques I	3

Term Hours: 15

### Spring semester

THEA 229	Introduction to Lighting Design	3
THEA 308	History of the Theatre	3
THEA 322	Costume Design Studio II	3
THEA 442	Advanced Patterning Techniques II	3
Social/behavioral sciences course (University Core)		3

Term Hours: 15

### Senior year

#### Fall semester

THEA 303	Black Theatre	3
or AFAM 303	or Black Theatre	
or THEA 403	or History of Dramatic Literature	
or THEA 404	or History of Dramatic Literature	
or THEA 423	or Modern Drama	
or THEA 424	or Modern Drama	

THEA 421	Advanced Costume Design Studio I	3
or THEA 469	or Advanced Patterning Techniques III	

Elective (directed course of study)	3
-------------------------------------	---

Humanities/fine arts course (University Core)	3
---	---

Term Hours: 12

#### Spring semester

THEA 422	Advanced Costume Design Studio II	3
or THEA 470	or Advanced Patterning Techniques IV	

THEA 430	Production	3-6
----------	------------	-----

THEA 495	Senior Project: Portfolio Review	1
----------	----------------------------------	---

Elective (directed course of study)	3
-------------------------------------	---

Open elective	3
---------------	---

Term Hours: 13-16

Total Hours: 120-124

## Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in lighting design/technical production

The Department of Theatre offers a Bachelor of Fine Arts in Theatre that may be entered into during the third year. All freshman and transfer students entering the department are initially classified as Theatre Foundation students. After successfully completing the first two years of core theatre courses in their foundation areas of emphasis, students apply for admission to a specific degree program (B.F.A. or B.A.). The department offers B.F.A. concentration areas in performance and stage management; as well as three areas of design/technology: scenic, lighting and costume. (See the individual specialization/concentration pages for curricula outlines.)

Student participation in both credit- and noncredit-bearing department activities may be required. Students matriculating in School of the Arts degree programs are bound by the policies and procedures stipulated in this bulletin and in any other current handbook or policy document adopted by the individual programs.

Because of the environment that exists in these preprofessional programs, all aspects of theatre as art, craft, business and education are experienced together. The curriculum immerses students in the practicalities of theatre. Throughout the four years, the performer works daily with voice, body and imagination, while the designer/technician is involved in studio classes and practical application. Prospective theatre



educators engage in intensive teacher-training activities that lead to certification.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate skills and techniques needed to enter the profession as a lighting designer/technician
- Demonstrate knowledge of history, theory and literature and their practical application

## Degree requirements for Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in lighting design/technical production

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional School of the Arts requirements

Approved General Education electives (Select nine credits from AFAM, ANTH, BIOL, CHEM, ECON, ENGL, ENVS, FRSC, GSWS, HIST, HUMS, INSC, INTL, MASC, MATH, MGMT, PHIL, PHYS, POLI, PSYC, RELS, SCTS, SOCY, STAT, UNIV or WRLD.)		9
Total Hours		9

### Collateral requirements

ARTH 103	Survey of Art I (or other non-Western art history course)	3
or ARTH 104	Survey of Art II	
SPCH 121	Effective Speech	3
THEA 103	Stagecraft	3
THEA 104	Costume Construction	3
THEA 113	Introduction to Acting I	3
THEA 211	Introduction to Drama	3
THEA 228	Introduction to Costume Design	3
THEA 307 & THEA 308	History of the Theatre and History of the Theatre	6
Select one of the following:		3
THEA/AFAM 303	Black Theatre	
THEA 403	History of Dramatic Literature	
THEA 404	History of Dramatic Literature	
THEA 423	Modern Drama	
THEA 424	Modern Drama	
Total Hours		30

### Major requirements

Select one of the following:		2
THEA 121	Introduction to Drawing	
ARTF 161	Figure Drawing I	
ARTF 162	Perspective and Three-dimensional Line Drawing	
THEA 161	Figure Drawing: Superficial Anatomy	
THEA 162	Figure Drawing: Draping the Human Form	
THEA 122	Color Theory	2
THEA 221	Introduction to Scene Design	3
THEA 225	Electricity for the Stage	3
THEA 229	Introduction to Lighting Design	3
THEA 237	Advanced Lighting I	3
THEA 251	Rehearsal and Performance I	2
THEA 252	Rehearsal and Performance II	1
THEA 324	Practicum in Stage Lighting (taken four semesters)	12
THEA 334	Sound Design I	3
or THEA 333	Sound Design Technology	
or THEA 326	Audio Mixing for Theatre	
THEA 327	Computer-assisted Design and Drafting for the Theatre	3
THEA 337	Advanced Lighting Design II	3
THEA 431	Production	3
THEA 437	Advanced Lighting Design III	3
THEA 495	Senior Project: Portfolio Review	1
Total Hours		47

### Electives

Select three upper level elective credits (300- or 400-level)	9
Select 4 open elective credits	4
Total Hours	13

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
THEA 103	Stagecraft	3
THEA 113	Introduction to Acting I	3
THEA 121	Introduction to Drawing	2
or ARTF 161	or Figure Drawing I	
or ARTF 162	or Perspective and Three-dimensional Line Drawing	
or THEA 161	or Figure Drawing: Superficial Anatomy	
or THEA 162	or Figure Drawing: Draping the Human Form	
THEA 225	Electricity for the Stage	3
THEA 251	Rehearsal and Performance I	1

UNIV 111	Focused Inquiry I	3
Term Hours:		15
<b>Spring semester</b>		
THEA 104	Costume Construction	3
THEA 122	Color Theory	2
THEA 229	Introduction to Lighting Design	3
UNIV 112	Focused Inquiry II	3
Quantitative literacy course (University Core)		3
Social/behavioral science course (University Core)		3
Term Hours:		17

**Sophomore year****Fall semester**

THEA 211	Introduction to Drama	3
THEA 221	Introduction to Scene Design	3
THEA 324	Practicum in Stage Lighting	3
THEA 327	Computer-assisted Design and Drafting for the Theatre	3
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		15

**Spring semester**

ARTH 103	Survey of Art I	3
or ARTH 104	or Survey of Art II	
THEA 237	Advanced Lighting I	3
THEA 252	Rehearsal and Performance II	1
THEA 324	Practicum in Stage Lighting	3
THEA 334	Sound Design I	3
or THEA 333	or Sound Design Technology	
or THEA 326	or Audio Mixing for Theatre	
Upper-level design elective (THEA 373 strongly recommended)		3
Term Hours:		16

**Junior year****Fall semester**

THEA 251	Rehearsal and Performance I	1
THEA 307	History of the Theatre	3
THEA 324	Practicum in Stage Lighting	3
THEA 337	Advanced Lighting Design II	3
General Education elective		3
Natural/physical science course (University Core)		3
Term Hours:		16

**Spring semester**

THEA 228	Introduction to Costume Design	3
THEA 308	History of the Theatre	3
THEA 324	Practicum in Stage Lighting	3
THEA 437	Advanced Lighting Design III	3
General Education elective		3
Term Hours:		15

**Senior year****Fall semester**

SPCH 121	Effective Speech	3
----------	------------------	---

THEA 303	Black Theatre	3
or THEA 403	or History of Dramatic Literature	
or THEA 404	or History of Dramatic Literature	
or THEA 423	or Modern Drama	
or THEA 424	or Modern Drama	
Elective (300- or 400-level)		3
General Education elective		3
Term Hours:		12

**Spring semester**

THEA 431	Production	3
THEA 495	Senior Project: Portfolio Review	1
Design elective		3
Humanities/fine arts course (University Core)		3
Open electives		4
Term Hours:		14
Total Hours:		120

## Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in performance

The Department of Theatre offers a Bachelor of Fine Arts in Theatre that may be entered into during the third year. All freshman and transfer students entering the department are initially classified as Theatre Foundation students. After successfully completing the first two years of core theatre courses in their foundation areas of emphasis, students apply for admission to a specific degree program (B.F.A. or B.A.). The department offers B.F.A. concentration areas in performance and stage management; as well as three areas of design/technology: scenic, lighting and costume. (See the individual specialization/concentration pages for curricula outlines.)

Student participation in both credit- and noncredit-bearing department activities may be required. Students matriculating in School of the Arts degree programs are bound by the policies and procedures stipulated in this bulletin and in any other current handbook or policy document adopted by the individual programs.

Because of the environment that exists in these preprofessional programs, all aspects of theatre as art, craft, business and education are experienced together. The curriculum immerses students in the practicalities of theatre. Throughout the four years, the performer works daily with voice, body and imagination, while the designer/technician is involved in studio classes and practical application. Prospective theatre educators engage in intensive teacher-training activities that lead to certification.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate skills and techniques needed to enter the profession as an actor
- Demonstrate knowledge of history, theory and literature and their practical application

## Degree requirements for Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in performance

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

<b>Additional School of the Arts requirements</b>		9
Approved General Education electives		
Total Hours		9

### Collateral requirements

THEA 100	Technical Production for Performers	1
THEA 103	Stagecraft	3
THEA 104	Costume Construction	3
THEA 113	Introduction to Acting I	3
THEA 114	Introduction to Acting II	3
THEA 211	Introduction to Drama	3
THEA 227	Introduction to Theatrical Makeup	3
Select one of the following:		3
THEA/AFAM 303	Black Theatre	
THEA 403	History of Dramatic Literature	
THEA 404	History of Dramatic Literature	
THEA 423	Modern Drama	
THEA 424	Modern Drama	
THEA 307	History of the Theatre	6
& THEA 308	and History of the Theatre	
THEA electives (300- or 400-level)		9
Total Hours		37

### Major requirements

THEA 201	Voice and Speech for the Actor I	3
THEA 202	Voice and Speech for the Actor II	3
THEA 203	Movement for the Actor I	3
THEA 204	Movement for the Actor II	3
THEA 213	Acting I	3
THEA 214	Acting II	3
THEA 301	Advanced Voice and Speech for the Actor I	3
THEA 302	Advanced Voice and Speech for the Actor II	3
THEA 311	Advanced Movement for the Actor I	3
THEA 312	Advanced Movement for the Actor II	3
THEA 313	Actor's Studio I	3
THEA 314	Actor's Studio II	3

THEA 315	Audition Technique	3
THEA 412	Acting for Camera	3
THEA 415	The Business of Theatre	4
Total Hours		46

### Electives

Select seven open elective credits	7
------------------------------------	---

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
THEA 100	Technical Production for Performers	1
THEA 103	Stagecraft	3
THEA 113	Introduction to Acting I	3
THEA 211	Introduction to Drama	3
UNIV 111	Focused Inquiry I	3
Humanities/fine arts course (University Core)		3
Term Hours:		16

#### Spring semester

THEA 104	Costume Construction	3
THEA 114	Introduction to Acting II	3
UNIV 112	Focused Inquiry II	3
Approved General Education elective		3
Social/behavioral sciences course (University Core)		3
Term Hours:		15

#### Sophomore year

##### Fall semester

THEA 201	Voice and Speech for the Actor I	3
THEA 203	Movement for the Actor I	3
THEA 213	Acting I	3
THEA 227	Introduction to Theatrical Makeup	3
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		15

##### Spring semester

THEA 202	Voice and Speech for the Actor II	3
THEA 204	Movement for the Actor II	3
THEA 214	Acting II	3
Natural/physical sciences course (University Core)		3
Quantitative literacy course (University Core)		3
Term Hours:		15

#### Junior year

##### Fall semester

THEA 301	Advanced Voice and Speech for the Actor I	3
THEA 307	History of the Theatre	3
THEA 311	Advanced Movement for the Actor I	3
THEA 313	Actor's Studio I	3
Approved General Education elective		3
Term Hours:		15

##### Spring semester

THEA 302	Advanced Voice and Speech for the Actor II	3
THEA 308	History of the Theatre	3
THEA 312	Advanced Movement for the Actor II	3
THEA 314	Actor's Studio II	3
Approved General Education elective		3
Term Hours:		15

**Senior year****Fall semester**

THEA 303	Black Theatre	3
or AFAM 303	or Black Theatre	
or THEA 403	or History of Dramatic Literature	
or THEA 404	or History of Dramatic Literature	
or THEA 423	or Modern Drama	
or THEA 424	or Modern Drama	
THEA 315	Audition Technique	3
THEA 412	Acting for Camera	3
THEA elective (300- or 400-level)		3
Open elective		3
Term Hours:		15

**Spring semester**

THEA 415	The Business of Theatre	4
THEA electives (300- or 400-level)		6
Open elective		4
Term Hours:		14
Total Hours:		120

## Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in scene design/technical production

The Department of Theatre offers a Bachelor of Fine Arts in Theatre that may be entered into during the third year. All freshman and transfer students entering the department are initially classified as Theatre Foundation students. After successfully completing the first two years of core theatre courses in their foundation areas of emphasis, students apply for admission to a specific degree program (B.F.A. or B.A.). The department offers B.F.A. concentration areas in performance and stage management; as well as three areas of design/technology: scenic, lighting and costume. (See the individual specialization/concentration pages for curricula outlines.)

Student participation in both credit- and noncredit-bearing department activities may be required. Students matriculating in School of the Arts degree programs are bound by the policies and procedures stipulated in this bulletin and in any other current handbook or policy document adopted by the individual programs.

Because of the environment that exists in these preprofessional programs, all aspects of theatre as art, craft, business and education are experienced together. The curriculum immerses students in the practicalities of theatre. Throughout the four years, the performer works daily with voice, body and imagination, while the designer/technician is

involved in studio classes and practical application. Prospective theatre educators engage in intensive teacher-training activities that lead to certification.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Demonstrate skills and techniques needed to enter the profession as a scenic designer/technician
- Demonstrate knowledge of history, theory and literature and their practical application

## Degree requirements for Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in scene design/technical production

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional School of the Arts requirements

Approved General Education elective		9
Total Hours		9

### Collateral requirements

ARTH 103	Survey of Art I	3
or ARTH 104	Survey of Art II	
THEA 103	Stagecraft	3
THEA 104	Costume Construction	3
THEA 113	Introduction to Acting I	3
THEA 121	Introduction to Drawing	2
or THEA 161	Figure Drawing: Superficial Anatomy	
THEA 122	Color Theory	2
or THEA 162	Figure Drawing: Draping the Human Form	
THEA 211	Introduction to Drama	3
THEA 307	History of the Theatre	3
THEA 308	History of the Theatre	3
Select one of the following:		3
THEA/AFAM 303	Black Theatre	
THEA 403	History of Dramatic Literature	
THEA 404	History of Dramatic Literature	
THEA 423	Modern Drama	
THEA 424	Modern Drama	
Total Hours		28

## Major requirements

Select one of the following: 3

THEA 219	Fundamentals of Entertainment Technology	
THEA 305	Advanced Scenic Design I	
THEA 333	Sound Design Technology	
THEA 221	Introduction to Scene Design	3
THEA 223 & THEA 224	Practicum in Theatre Technology and Practicum in Theatre Technology	6
THEA 227 or THEA 228	Introduction to Theatrical Makeup or Introduction to Costume Design	3
THEA 229	Introduction to Lighting Design	3
THEA 251 & THEA 252	Rehearsal and Performance I and Rehearsal and Performance II	4

Select one of the following: 3

THEA 306	Advanced Scenic Design II	
THEA 320	Structural Design for the Stage	
THEA 334	Sound Design I	

Complete two semesters of 6

THEA 323	Practicum in Advanced Theatre Technology	
THEA 326 or THEA 408	Audio Mixing for Theatre or Advanced Scene Painting	3
THEA 327	Computer-assisted Design and Drafting for the Theatre	3

Select one of the following: 3

THEA 330	Production	
THEA 331	Production	
THEA 430	Production	
THEA 431	Production	

THEA 495	Senior Project: Portfolio Review	1
THEA 3XX or 4XX	upper-level design electives	6
THEA 4XX	electives	6

Total Hours 53

## Electives

Select three elective credits (300- or 400-level) 3

Select six open elective credits 6

Total Hours 9

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

#### Fall semester

THEA 103	Stagecraft	3
THEA 113	Introduction to Acting I	3
THEA 121 or THEA 161	Introduction to Drawing or Figure Drawing: Superficial Anatomy	2
THEA 211	Introduction to Drama	3
THEA 251	Rehearsal and Performance I	2

UNIV 111 Focused Inquiry I 3

Term Hours: 16

#### Spring semester

THEA 104	Costume Construction	3
THEA 122 or THEA 162	Color Theory or Figure Drawing: Draping the Human Form	2
THEA 252	Rehearsal and Performance II	2
UNIV 112	Focused Inquiry II	3
Humanities/fine arts course (University Core)		3

Term Hours: 13

### Sophomore year

#### Fall semester

THEA 221	Introduction to Scene Design	3
THEA 223	Practicum in Theatre Technology	3
THEA 227 or THEA 228	Introduction to Theatrical Makeup or Introduction to Costume Design	3
Social/behavioral sciences course (University Core)		3
Approved General Education elective		3

Term Hours: 15

#### Spring semester

THEA 224	Practicum in Theatre Technology	3
THEA 229	Introduction to Lighting Design	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved General Education elective		3
Natural/physical sciences course (University Core)		3

Term Hours: 15

### Junior year

#### Fall semester

THEA 219 or THEA 305 or THEA 333	Fundamentals of Entertainment Technology or Advanced Scenic Design I or Sound Design Technology	3
THEA 307	History of the Theatre	3
THEA 323	Practicum in Advanced Theatre Technology	3
THEA 327	Computer-assisted Design and Drafting for the Theatre	3

THEA 330 or THEA 331 or THEA 430 or THEA 431	Production or Production or Production or Production	3
--	--	---

Term Hours: 15

#### Spring semester

THEA 306 or THEA 320 or THEA 334	Advanced Scenic Design II or Structural Design for the Stage or Sound Design I	3
THEA 308	History of the Theatre	3
THEA 323	Practicum in Advanced Theatre Technology	3



Approved General Education elective	3
Quantitative literacy course (University Core)	3
Term Hours:	15
<b>Senior year</b>	
<b>Fall semester</b>	
ARTH 103 Survey of Art I or ARTH 104 or Survey of Art II	3
THEA 303 Black Theatre or AFAM 303 or Black Theatre or THEA 403 or History of Dramatic Literature or THEA 404 or History of Dramatic Literature or THEA 423 or Modern Drama or THEA 424 or Modern Drama	3
THEA 326 Audio Mixing for Theatre or THEA 408 or Advanced Scene Painting	3
THEA 3XX or 4XX upper-level design elective	3
Open elective	3
Term Hours:	15
<b>Spring semester</b>	
THEA 495 Senior Project: Portfolio Review	1
THEA 4XX level electives	6
Elective (300- or 400-level)	3
THEA 3XX or 4XX upper-level design elective	3
Open elective	3
Term Hours:	16
Total Hours:	120

## Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in stage management/technical production

The Department of Theatre offers a Bachelor of Fine Arts in Theatre that may be entered into during the third year. All freshman and transfer students entering the department are initially classified as Theatre Foundation students. After successfully completing the first two years of core theatre courses in their foundation areas of emphasis, students apply for admission to a specific degree program (B.F.A. or B.A.). The department offers B.F.A. concentration areas in performance and stage management; as well as three areas of design/technology: scenic, lighting and costume. (See the individual specialization/concentration pages for curricula outlines.)

Student participation in both credit- and noncredit-bearing department activities may be required. Students matriculating in School of the Arts degree programs are bound by the policies and procedures stipulated in this bulletin and in any other current handbook or policy document adopted by the individual programs.

Because of the environment that exists in these preprofessional programs, all aspects of theatre as art, craft, business and education

are experienced together. The curriculum immerses students in the practicalities of theatre. Throughout the four years, the performer works daily with voice, body and imagination, while the designer/technician is involved in studio classes and practical application. Prospective theatre educators engage in intensive teacher-training activities that lead to certification.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Demonstrate skills and techniques needed to enter the profession as a stage manager
- Demonstrate knowledge of history, theory and literature and their practical application

## Degree requirements for Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in stage management/technical production

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

<b>Additional School of the Arts requirements</b>	9
Approved General Education elective	
Total Hours	9

### Collateral requirements

ARTH 103 Survey of Art I or ARTH 104 Survey of Art II	3
THEA 103 Stagecraft	3
THEA 104 Costume Construction	3
THEA 113 Introduction to Acting I	3
THEA 211 Introduction to Drama	3
THEA 212 Introduction to Drama II	3
THEA 307 History of the Theatre	3
THEA 308 History of the Theatre	3
Select one of the following:	3
THEA/AFAM 303 Black Theatre	
THEA 403 History of Dramatic Literature	
THEA 404 History of Dramatic Literature	
THEA 423 Modern Drama	
THEA 424 Modern Drama	
Art Foundation technical laboratory electives	2
Total Hours	29

**Major requirements**

THEA 221	Introduction to Scene Design	3
THEA 227	Introduction to Theatrical Makeup	3
THEA 228	Introduction to Costume Design	3
THEA 229	Introduction to Lighting Design	3
Complete two semesters of		6
THEA 251	Rehearsal and Performance I	
THEA 252	Rehearsal and Performance II	3
Complete two semesters of		6
THEA 325	Stage Management Practicum	
THEA 351	Rehearsal and Performance	3
THEA 361	Directing I	3
THEA 362	Directing II	3
THEA 451	Rehearsal and Performance	3
THEA 495	Senior Project: Portfolio Review	1
Stage management electives: Select three of the following:		9
THEA 432	Stage Management: Music Theory	
THEA 433	Stage Management: Musical Theatre and Opera	
THEA 434	Stage Management: Maintaining and Remounting Productions	
THEA 435	The Business of Stage Management	
Total Hours		49

**Electives**

Select 12 elective credits (300- or 400-level) 12

**Total minimum requirement 120 credits**

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Freshman year**

Fall semester		Hours
THEA 103	Stagecraft	3
THEA 113	Introduction to Acting I	3
THEA 251	Rehearsal and Performance I	3
THEA 325	Stage Management Practicum	3
UNIV 111	Focused Inquiry I	3
Art Foundation technical laboratory elective		1
Term Hours:		16

**Spring semester**

THEA 104	Costume Construction	3
THEA 252	Rehearsal and Performance II	3
THEA 325	Stage Management Practicum	3
UNIV 112	Focused Inquiry II	3
Approved General Education elective		3
Art Foundation technical laboratory elective		1
Term Hours:		16

**Sophomore year****Fall semester**

ARTH 103	Survey of Art I	3
or ARTH 104	or Survey of Art II	
THEA 211	Introduction to Drama	3
THEA 251	Rehearsal and Performance I	3
UNIV 200	Inquiry and the Craft of Argument	3
Stage management elective		3
Term Hours:		15

**Spring semester**

THEA 212	Introduction to Drama II	3
Humanities/fine arts course (University Core)		3
Quantitative literacy course (University Core)		3
Social/behavioral sciences course (University Core)		3
Stage management elective		3
Term Hours:		15

**Junior year****Fall semester**

THEA 221	Introduction to Scene Design	3
THEA 227	Introduction to Theatrical Makeup	3
THEA 351	Rehearsal and Performance	3
Elective (300- or 400-level)		3
Stage management elective		3
Term Hours:		15

**Spring semester**

THEA 228	Introduction to Costume Design	3
THEA 229	Introduction to Lighting Design	3
Approved general education elective		3
Elective (300- or 400-level)		3
Natural/physical sciences course (University Core)		3
Term Hours:		15

**Senior year****Fall semester**

THEA 303	Black Theatre	3
or AFAM 303	or Black Theatre	
or THEA 403	or History of Dramatic Literature	
or THEA 404	or History of Dramatic Literature	
or THEA 423	or Modern Drama	
or THEA 424	or Modern Drama	
THEA 307	History of the Theatre	3
THEA 361	Directing I	3
THEA 451	Rehearsal and Performance	3
Elective (300- or 400-level)		3
Term Hours:		15

**Spring semester**

THEA 308	History of the Theatre	3
THEA 362	Directing II	3
THEA 495	Senior Project: Portfolio Review	1
Approved General Education elective		3

Elective (300- or 400-level)	3
Term Hours:	13
Total Hours:	120

## School of the Arts in Qatar

Al Luqta Street  
Education City  
P.O. Box 8095  
Doha, Qatar  
Phone: (+974) 4402 0555  
Fax: (+974) 4402 1489

qatar.vcu.edu (<http://www.qatar.vcu.edu>)

Funded by the Qatar Foundation for Education, Science and Community Development

**Akel I. Kahera**  
Dean

**Line Christiansen**  
Associate dean for academic affairs

**Gary Huff**  
Associate dean for administration

**Greet Provoost**  
Assistant dean for enrollment and registration services

**Valerie Jeremijenko**  
Assistant dean for student affairs

**Meike Kaan**  
Executive director of communications and external relations

**Hissa Al Garni**  
Director of strategic engagement and business development

**Michael John Arrighi**  
Chief safety officer

Founded in 1998 as a collaboration between the Qatar Foundation for Education, Science and Community Development and Virginia Commonwealth University School of the Arts, the School of the Arts in Qatar offers the baccalaureate degrees in art history, fashion design, graphic design, interior design, and painting and printmaking, as well as a Master of Fine Art in Design. Its purpose is to provide special educational opportunities preparing graduates for leadership roles in the design professions and art history. Courses emulate those offered on VCU's Monroe Park Campus. Graduates are prepared for exciting careers in these growing fields.

VCU School of the Arts obtained the appropriate approvals from the VCU Board of Visitors and the State Council of Higher Education for Virginia and admitted the first class to what would become VCU School of the Arts in Qatar in fall 1998. SCHEV approved the request in April 2001 and forwarded its recommendation to the governor and General Assembly. The 2002 General Assembly adopted legislation authorizing VCU to establish a campus in Qatar.

## Admission

### Overview of application requirements

Admission policies for VCU School of the Arts in Qatar are the same as those in effect for VCU School of the Arts in Richmond with minor exceptions that recognize the culture and heritage of applicants from the Gulf region. Applications must include the requirements as listed below.

1. Applicants must present the Qatari Thanawiya (General Secondary Education Certificate) or equivalent certificate from an accredited high school. Students applying from the British system must submit the results of their IGCSE and A- or AS-level tests. Students applying from the U.S. system must complete a college preparatory curriculum. Students whose grades do not qualify them for admission are recommended to an academic bridge program (see below (p. 346)).
2. Applicants must submit college/university transcripts, if any, of all institutions of higher education attended, course descriptions and a foreign credential assessment by World Education Services
3. Applicants must show proficiency in the English language, as evidenced by official test scores of the Test of English as a Foreign Language or the International English Language Testing System.
4. Applicants must complete the VCUQatar application for admission.
5. An art portfolio is required for applicants to the Bachelor of Fine Arts programs in graphic design, interior design, fashion, or painting and printmaking.
6. Applicants to the Bachelor of Arts program in art history must submit an essay. Topics are specified and vary each year.
7. Applicants must submit a personal statement.
8. A letter of recommendation is required.

All application items listed above are required to be considered for admission. Once submitted, application materials become the confidential property of VCUQatar.

### Academic requirements

Admission to the School of the Arts in Qatar is granted on a competitive basis.

- Qatari Thanawiya score must be, at minimum, 80 percent.
- Applicants completing the British curriculum must present at least five IGSC and three AS subject tests with minimum grades of B.
- Applicants completing the U.S. curriculum must present a minimum GPA of 3.0 (on a 4.0 scale).
- Transcripts issued in a language other than English must be accompanied by an official English language translation.

### Evaluation of transcripts

VCUQatar course credit may be available to applicants who took or completed International Baccalaureate Diploma program courses, Cambridge International Examinations and/or Advanced Placement tests of the College Entrance Examination Board.

To be considered for course credits, test records and/or transcripts must be submitted prior to the end of the first semester of enrollment at VCUQatar.

Applicants applying for transfer credit from a postsecondary institution must submit official transcripts of all institutions of higher education attended, as well as course descriptions, and a foreign credential evaluation by World Education Services. Faculty and administrative

committees determine placement in all upper-level courses after evaluating the student's record and portfolio of course work.

## English language proficiency requirements

TOEFL (at minimum)

- 80 (internet-based)
- 213 (computer-based)
- 550 (paper-based)

IELTS (at minimum)

- 6.0 overall band score

Test scores must be sent electronically by the testing center to VCUQatar. Additionally, students must submit a copy of their Student Test Score report. Test scores may not be more than two years older than the date received at VCUQatar. VCUQatar's TOEFL institutional code is 8753.

## Mathematics placement test

All incoming students are required to take the mathematics placement test. Placement tests are generally held during the New Student Orientation Program at VCUQatar.

## Academic bridge program

Applicants whose grades do not qualify them for admission are recommended to the academic bridge program of the Qatar Foundation. Applicants admitted as dual enrolled students at ABP and VCUQatar are guaranteed admission to VCUQatar after successful completion of the academic bridge program. Dual enrollment status is limited and highly competitive.

## First-year incubator program

Academically strong applicants who show promise of artistic talent may be admitted to the first-year incubator program, the pre-Art Foundation Program, at VCUQatar.

## Academics

### Art Foundation Program

Students admitted to the Bachelor of Fine Arts Program at VCUQatar complete the Art Foundation Program during their first year of enrollment. Upon successful completion of the Art Foundation Program, students move in to their major field of study. Students admitted to the Bachelor of Arts program at VCUQatar are directly admitted to the major in art history.

### Liberal Arts and Sciences Program

In addition to the courses in the major field of study, students at VCUQatar complete core course work within the Liberal Arts and Sciences Program, which provides academic breadth and depth through courses that promote comprehensive intellectual, cultural and social development.

### Honors Program

Students who are academically strong and who are interested in enhanced learning and added intellectual stimulation may apply to become part of the VCUQatar Honors Program (p. 355).

## Internships

VCUQatar students are required to complete internship course work for which university credit is offered. These placements are under the supervision of faculty members within the major.

## Education abroad

VCUQatar students are strongly encouraged to participate in a one-term exchange or study abroad program or in short-term international field trips offered during breaks or holidays.

## Degree requirements

To earn a degree from VCU at VCUQatar, students must complete the stated number of course credits, meet all course requirements for the major and the Liberal Arts and Sciences Program, and attain a minimum cumulative GPA of 2.00 and a minimum GPA of 2.00 in the major concentration.

## Degree programs

Baccalaureate programs within the School of the Arts in Qatar prepare students for careers in the following departments:

- Art history (p. 346)
- Fashion design (p. 348)
- Graphic design (p. 349)
- Interior design (p. 351)
- Painting and printmaking (p. 353)
- Islamic art history, minor in – VCUQatar Campus (p. 355)

## Art History, Bachelor of Arts (B.A.) with a concentration in art historical [VCUQ]

The Bachelor of Arts in Art History is a liberal arts program composed of an academic course of study exposing the student to the scholarship, theoretical perspectives and research methods of not only the history of art, but related disciplines in the humanities. Courses focus on cultures, historical periods and regions. The program also includes possibilities for directed research projects as well as museum internships. This curriculum provides students the best possible background for future graduate work in art history.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Practice precise and thorough observation
- Write and speak effectively about art and architecture
- Acquire knowledge of key monuments, artists and art movements in the history of art
- Conduct research using art historical methods

## Special requirements

Art history majors must earn a minimum grade of C in each ARTH course to be applied to the curriculum requirements. In addition to the regular admissions requirements of VCU-Qatar, applicants to the art history program must submit the following: 1) official SAT or ACT scores; and 2) an essay as a writing sample with their online application. Details on the essay topic and length are found on the VCU-Q online application

process. For additional information please see the department's website (<http://arts.vcu.edu/arhistory>).

## Degree requirements for Art History, Bachelor of Arts (B.A.) with a concentration in art historical

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

ANTH, GEOG, HIST or RELS	9
--------------------------	---

### Collateral requirements

ENGL 215	Textual Analysis	3
UNIV 101	Introduction to the University	1
Select one of the following:		3
ARBC 202	Intermediate Arabic II	
FREN 202	Intermediate French Readings	
ITAL 202	Intermediate Italian Readings	
SPAN 202	Intermediate Spanish Readings	
GRMN 202	Intermediate German II	
HIST (any)		12
HIST (300-level)		3
Fine arts studio (CRAF, PAPR, or PHTO)		6
Total Hours		28

### Major requirements

Select one of the following:		6
ARTF 105 & ARTF 106	Survey of World Art and Survey of World Art	
ARTF 115 & ARTF 116	Art History Survey and Art History Survey	
ARTH 390	Art Historical Methods	3
ARTH 490	Senior Seminar in Art History (capstone)	3

#### ARTH 200- to 500-level courses

ARTH 260	Islamic Art Survey	3
ARTH 261	Islamic Art Survey	3
ARTH 300	Prehistoric and Ancient Art and Architecture	3
ARTH 302	Museums in the 21st Century	3
ARTH 311	Islamic Art and the West Before 1200	3
ARTH 312	Islamic Art and the West From 1200 to 1600	3
ARTH 321	Islamic Art and the West From 1600 to 1800	3

ARTH 465	Islamic Art and the West From 1800 to 1900	3
ARTH 466	Modern and Contemporary Art in the Middle East	3
ARTH 493	Museum Internship	3
Total Hours		42

### Open electives

Select 21 open elective credits	21
---------------------------------	----

### Total minimum requirement 121 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
ANTH 103	Introduction to Anthropology (satisfies University Core social/behavioral science)	3
ARTF 115	Art History Survey	3
MATH 131	Introduction to Contemporary Mathematics (satisfies University Core quantitative literacy)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
HIST (any)		3
Term Hours:		16

#### Spring semester

ARTF 116	Art History Survey	3
UNIV 112	Focused Inquiry II	3
Natural/physical sciences course (University Core)		3-4
HIST (any)		3
Fine art studio (CRAF, PAPR, or PHTO)		3
Term Hours:		15-16

#### Sophomore year

Fall semester		
ARTH 260	Islamic Art Survey	3
UNIV 200	Inquiry and the Craft of Argument	3
ARBC, FREN, ITAL, SPAN or GERM 101 (or open elective if language requirement is met)		3-4
Fine art studio (CRAF, PAPR, or PHTO)		3
HIST (any)		3
Term Hours:		15-16

#### Spring semester

ARTH 261	Islamic Art Survey	3
ARTH 300	Prehistoric and Ancient Art and Architecture	3
ARTH 390	Art Historical Methods	3
ENGL 215	Textual Analysis	3
ARBC, FREN, ITAL, SPAN, or GERM 102 (or open elective if language requirement is met)		3-4
Term Hours:		15-16

#### Junior year

##### Fall semester



ARTH 302	Museums in the 21st Century	3
ARTH 311	Islamic Art and the West Before 1200	3
ANTH, RELS, HIST, GEOG or general education		3
ARBC, FREN, ITAL, SPAN, or GERM 102 (or open elective if language requirement is met)		3
HIST (any)		3
Term Hours:		15
<b>Spring semester</b>		
ARTH 312	Islamic Art and the West From 1200 to 1600	3
ARTH 321	Islamic Art and the West From 1600 to 1800	3
ARBC, FREN, ITAL, SPAN, or GERM 202		3
HIST 300-level		3
Approved University Core humanities/fine arts		3
Term Hours:		15
<b>Senior year</b>		
<b>Fall semester</b>		
ARTH 465	Islamic Art and the West From 1800 to 1900	3
ARTH 490	Senior Seminar in Art History (capstone)	3
ANTH, RELS, HIST, GEOG or general education		3
Open electives		6
Term Hours:		15
<b>Spring semester</b>		
ARTH 466	Modern and Contemporary Art in the Middle East	3
ARTH 493	Museum Internship	3
ANTH, RELS, HIST, GEOG or general education		3
Open electives (300-level)		6
Term Hours:		15
Total Hours:		121-124

## Fashion, Bachelor of Fine Arts (B.F.A.) with a concentration in fashion design [VCUQ]

The fashion design curriculum offers technical and design courses that provide skills required in the fashion industry. Individual designs are presented in two-dimensional form, developed and perfected through techniques used in the fashion industry, and then executed in final and three-dimensional form in fabrics appropriate to the design. A fashion industry internship is required.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Utilize problem-solving skills: Apply investigative and research skills in the completion of studio projects
- Implement industry-standard computer technology.
- Demonstrate professional visual and oral presentation skills
- Understand the global nature of the fashion industry

## Degree requirements for Fashion, Bachelor of Fine Arts (B.F.A.) with fashion design concentration

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

ENGL 388	Writing in the Workplace	3
General education electives		6
Total Hours		9

### Collateral requirements

#### Art Foundation Program

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	2

#### Art history

ARTF 115 & ARTF 116	Art History Survey and Art History Survey	6
---------------------	---	---

#### Additional requirements

ENGL 215	Textual Analysis (satisfies University Core humanities/fine arts)	
MATH 131	Introduction to Contemporary Mathematics (satisfies University Core quantitative literacy)	
UNIV 101	Introduction to the University	1
Total Hours		21

### Major requirements

FASH 201	Construction Techniques	3
FASH 202	Draping	3
FASH 203 & FASH 204	Patternmaking and Patternmaking	6
FASH 205 & FASH 206	Fashion Drawing I and Fashion Drawing I	6
FASH 290	Textiles for the Fashion Industry	3
FASH 301	Design I Studio	3
FASH 302	Design I Studio	3
FASH 319	Contemporary Fashion	3
FASH 330	The Business of Design	3
FASH 343	Fashion Forecasting	3

FASH 345	Computers for Fashion Design: Adobe Photoshop and Illustrator	3
FASH 350	Fashion Promotion	3
FASH 391	Fashion Workshop	3
FASH 401	Design II Studio	3
FASH 402	Design II Studio	3
Take two semesters of the following:		6
FASH 403	Design Theory and Illustration I	
Take two semesters of the following:		6
FASH 404	Design Theory and Illustration II	
FASH 490	Fashion Seminar	1
FASH 493	Fashion Internship	1-3
Total Hours		65-67

## Open electives

Select six open elective credits at the 300 level or higher 6

## Total minimum requirement 122 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
ARTF 115	Art History Survey	3
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project	1
MATH 131	Introduction to Contemporary Mathematics (satisfies University Core quantitative literacy)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Term Hours:		17

### Spring semester

ARTF 116	Art History Survey	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	1
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3
Term Hours:		16

### Sophomore year

Fall semester		Hours
FASH 201	Construction Techniques	3
FASH 203	Patternmaking	3
FASH 205	Fashion Drawing I	3
FASH 290	Textiles for the Fashion Industry	3
General education elective		3
Term Hours:		15

### Spring semester

FASH 202	Draping	3
FASH 204	Patternmaking	3
FASH 206	Fashion Drawing I	3

FASH 345	Computers for Fashion Design: Adobe Photoshop and Illustrator	3
FASH 391	Fashion Workshop (fashion show production)	1
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		16

### Junior year

Fall semester		Hours
ENGL 215	Textual Analysis (satisfies University Core humanities/fine arts)	3
FASH 301	Design I Studio	3
FASH 319	Contemporary Fashion	3
FASH 350	Fashion Promotion	3
FASH 403	Design Theory and Illustration I	3
Term Hours:		15

### Spring semester

ENGL 388	Writing in the Workplace	3
FASH 302	Design I Studio	3
FASH 330	The Business of Design	3
FASH 343	Fashion Forecasting	3
FASH 391	Fashion Workshop (fashion show production)	1
FASH 404	Design Theory and Illustration II	3
Term Hours:		16

### Senior year

Fall semester		Hours
FASH 401	Design II Studio	3
FASH 403	Design Theory and Illustration I	3
FASH 490	Fashion Seminar	1
Approved natural/physical science (University Core)		3-4
Open electives		6
Term Hours:		16-17

### Spring semester

FASH 391	Fashion Workshop (fashion show production)	1
FASH 402	Design II Studio	3
FASH 404	Design Theory and Illustration II	3
FASH 493	Fashion Internship	1-3
General education elective		3
Term Hours:		11-13
Total Hours:		122-125

## Graphic Design, Bachelor of Fine Arts (B.F.A.) [VCUQ]

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- **Utilize forms of communication:** With a sense of aesthetics, personal and professional integrity, and message clarity, students will utilize visual and verbal forms of communication to convey ideas and information.

- **Address needs of client and audience:** Students will demonstrate an understanding of their responsibility to client and audience – determining needs, structuring problems and solving problems creatively.
- **Focus on ethics:** Students will solve communication problems with a focus on their positive ethical impact upon culture and society.
- **Embrace technology as a vehicle of communication:** Students will demonstrate the ability to use new and emerging technology as a vehicle of effective communication and a means for the invention of expressive form.
- **Practice design as a dynamic process:** Students will understand and practice design as a process that relies upon intuition, reason, ideation methods and effective research for the creation of appropriate and inventive solutions.

## Degree requirements for Bachelor of Fine Arts, Graphic Design (B.F.A.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

ENGL 388	Writing in the Workplace	3
General education electives		6
Total Hours		9

### Collateral requirements

#### Art Foundation Program

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	2

#### Art history

ARTF 115	Art History Survey	6
& ARTF 116	and Art History Survey	

#### Additional requirements

ENGL 215	Textual Analysis (satisfies University Core humanities/fine arts)	
MATH 131	Introduction to Contemporary Mathematics (satisfies University Core quantitative literacy)	
UNIV 101	Introduction to the University	1
Total Hours		21

### Major requirements

GDES 202	Design Technology	3
----------	-------------------	---

GDES 205	Design Methods and Processes	3
GDES 211	Typography I	3
GDES 212	Design Form and Communication	3
GDES 213	Typography II	3
GDES 214	Imaging I	3
GDES 216	Imaging II	3
GDES 252	History of Visual Communication	3
GDES 253	Theory and Philosophy of Visual Communication	3
GDES 330	The Business of Design	3
GDES 343	Systems in Design	3
GDES 345	Print I	3
GDES 346	Visual Narrative I	3
GDES 347	Interaction I	3
GDES 365	Print II	3
GDES 366	Visual Narrative II	3
GDES 367	Interaction II	3
GDES 470	Senior Seminar	3
GDES 472	Senior Studio (capstone)	3
Take two semesters of the following:		6
GDES 491	Studio Topics in Design	
GDES 492	Design Internship	3
Total Hours		66

### Open electives

Select six open elective credits at the 300-level	6
---	---

### Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
ARTF 115	Art History Survey	3
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project	1
MATH 131	Introduction to Contemporary Mathematics (satisfies University Core quantitative literacy)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Term Hours:		17

#### Spring semester

ARTF 116	Art History Survey	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	1
UNIV 112	Focused Inquiry II	3
Social/behavioral sciences course (University Core)		3
Term Hours:		16

#### Sophomore year

##### Fall semester

GDES	202	Design Technology	3
GDES	205	Design Methods and Processes	3
GDES	211	Typography I	3
GDES	214	Imaging I	3
GDES	252	History of Visual Communication	3
Term Hours:			15

**Spring semester**

GDES	212	Design Form and Communication	3
GDES	213	Typography II	3
GDES	216	Imaging II	3
GDES	253	Theory and Philosophy of Visual Communication	3
UNIV	200	Inquiry and the Craft of Argument	3
Term Hours:			15

**Junior year****Fall semester**

GDES	330	The Business of Design	3
GDES	345	Print I	3
GDES	346	Visual Narrative I	3
GDES	347	Interaction I	3
General education elective			3
Term Hours:			15

**Spring semester**

ENGL	215	Textual Analysis (satisfies University Core humanities/fine arts)	3
GDES	365	Print II	3
GDES	366	Visual Narrative II	3
GDES	367	Interaction II	3
GDES	492	Design Internship	3
Term Hours:			15

**Senior year****Fall semester**

ENGL	388	Writing in the Workplace	3
GDES	330	The Business of Design	3
GDES	470	Senior Seminar	3
GDES	491	Studio Topics in Design	3
General education elective			3
Term Hours:			15

**Spring semester**

GDES	472	Senior Studio	3
GDES	491	Studio Topics in Design	3
Approved natural/physical science (University Core)			3-4
Open elective			3
Term Hours:			12-13
Total Hours:			120-121

1. **Students will demonstrate professional values.** The students will demonstrate professional values that address client and user needs in response to the built environment, professional ethics, environmental ethics and the role of sustainability in the practice of interior design. Students will demonstrate an understanding of a global perspective approach to thinking and problem-solving (viewing design with awareness and respect for cultural and social differences of people; understanding issues that affect the sustainability of the planet; understanding of the implications of conducting the practice of design within a world market). Students will demonstrate critical and analytical thinking, creative thinking, and the ability to think visually and volumetrically. Students will demonstrate professional discipline (i.e., time management, organizational skills) and active listening skills. Students will understand the importance of community and public service.
2. **Student work will demonstrate design fundamentals.** Students will demonstrate knowledge of design fundamentals including design elements and principles, color principles, theories and systems, theories of design and composition, and principles and theories of lighting design. Students will demonstrate an understanding of the theories of human behavior in the built environment including human factors (ergonomics, anthropometrics), the relationship between human behavior and the built environment, and an understanding of the principles of sustainability. Students will demonstrate knowledge of the history of art, architecture and design.
3. **Student work will demonstrate knowledge of interior design.** Students will demonstrate knowledge and application of the design process and two- and three-dimensional design elements and principles in the development of the spatial envelope. Student work will demonstrate programming skills, including problem identification, identification of client and user needs, and information gathering research and analysis (functional requirements, code research, sustainability issues, etc.). Student work will demonstrate competent schematic design, concept development and problem-solving (concept statements, conceptual drawings, space planning). Student work will demonstrate competent design development skills (selection of finishes and materials; furniture selection and plan, plans, elevations, sketches, and study models; luminaires and lighting sources; design justification solutions in relation to the program and concept; appropriate selection and application of decorative architectural elements). Student work will demonstrate competent skills in preparing drawings, schedules and specifications as an integrated system in a single project. Student work should demonstrate an understanding of appropriate selection and application of art and accessories, the ability to custom design interior elements, way-finding methods and graphic identification. Student work must demonstrate understanding that design solutions affect and are impacted by building systems and interior materials. Students must demonstrate understanding of the impact of laws, codes, regulations, standards and practices that protect the health, safety and welfare of the public.
4. **Student work will demonstrate effective communication.** Student work will demonstrate competence in drafting and lettering, both manual and computer-aided techniques; illustrative drawing; and presentation of color, materials and furnishings. Students must express ideas clearly in oral presentations and critiques; communicate clearly in writing of specifications, schedules, and contracts and other business-related documents, such as project programs, concept statements, reports, research papers, resumes and correspondence. Student work must demonstrate the student's

## Interior Design, Bachelor of Fine Arts (B.F.A.) [VCUQ]

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

ability to successfully render the design intent using two- and three-dimensional methods (manual and computer-aided).

5. **Students will demonstrate a foundation in business and professional practices.** Students will demonstrate understanding of project management (estimating, budget management, contract administration, information management, conflict resolution, assessment processes including post-occupancy evaluation). Students must demonstrate knowledge of licensing and registration requirements for interior designers and professional design organizations, Students must demonstrate understanding of basic business computer applications (word processing, spreadsheets) and business procedures (marketing, strategic planning).

## Special requirements

For consideration and entry into the interior design major, students must successfully complete all foundation studio courses and submit a portfolio of their work for review.

## Degree requirements for Interior Design, Bachelor of Fine Arts (B.F.A.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

ENGL 388	Writing in the Workplace	3
General education electives		6
Total Hours		9

### Collateral requirements

Art Foundation program			
ARTF	131	Drawing Studio	3
ARTF	132	Surface Research	3
ARTF	133	Space Research	3
ARTF	134	Time Studio	3
ARTF	139	Project	2
Art history			
ARTF	115	Art History Survey	6
& ARTF	116	and Art History Survey	
Additional requirements			
UNIV	101	Introduction to the University	1
Art/design elective (Any ARTS, CRAF, GDES, FASH, IDES, or PAPR course)			3
Total Hours			24

### Major requirements

IDES 201	Introductory Interior Design Studio I	4
----------	---------------------------------------	---

IDES 202	Introductory Interior Design Studio II	4
IDES 211	Interior Graphics I	3
IDES 212	Interior Graphics II	3
IDES 231	Fundamentals of Interior Design	3
IDES 251	Historic Environments: Ancient Through 19th Century	3
IDES 301	Interior Design Studio I	4
IDES 302	Interior Design Studio II	4
IDES 311	Advanced Interior Graphics I	3
IDES 312	Advanced Interior Graphics II	3
IDES 321	Interior Materials and Textiles	3
IDES 323	Light and Color in Interior Environments	3
IDES 330	The Business of Design	3
IDES 370	Design History: 20th and 21st Centuries	3
IDES 400	Senior Interior Design Studio I	4
IDES 401	Senior Interior Design Studio II (capstone)	4
IDES 421	Construction Documents	3
IDES 422	Building Systems	3
IDES 441	Senior Design Seminar I (capstone)	2
IDES 442	Senior Design Seminar II (capstone)	2
IDES 493	Interior Design Internship	3
Total Hours		67

### Total minimum requirement 121 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
ARTF 115	Art History Survey	3
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project	1
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved quantitative literacy (University Core)		3
Term Hours:		17

#### Spring semester

ARTF 116	Art History Survey	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	1
UNIV 112	Focused Inquiry II	3
Approved natural/physical sciences (University Core)		3-4
Term Hours:		16-17

#### Sophomore year

Fall semester		Hours
IDES 201	Introductory Interior Design Studio I	4
IDES 211	Interior Graphics I	3
IDES 231	Fundamentals of Interior Design	3



IDES 251	Historic Environments: Ancient Through 19th Century	3
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		16

**Spring semester**

IDES 202	Introductory Interior Design Studio II	4
IDES 212	Interior Graphics II	3
IDES 311	Advanced Interior Graphics I	3
IDES 321	Interior Materials and Textiles	3
General education elective		3
Term Hours:		16

**Junior year****Fall semester**

ENGL 215	Textual Analysis (satisfies University Core humanities/fine arts)	3
IDES 301	Interior Design Studio I	4
IDES 312	Advanced Interior Graphics II	3
IDES 323	Light and Color in Interior Environments	3
IDES 422	Building Systems	3
Term Hours:		16

**Spring semester**

ENGL 388	Writing in the Workplace	3
IDES 302	Interior Design Studio II	4
IDES 370	Design History: 20th and 21st Centuries	3
IDES 421	Construction Documents	3
General education elective		3
Term Hours:		16

**Senior year****Fall semester**

IDES 330	The Business of Design	3
IDES 400	Senior Interior Design Studio I	4
IDES 441	Senior Design Seminar I	2
Approved social/behavioral sciences (University Core)		3
Term Hours:		12

**Spring semester**

IDES 401	Senior Interior Design Studio II	4
IDES 442	Senior Design Seminar II	2
IDES 493	Interior Design Internship	3
Art/design elective (Any ARTS, CRAF, GDES, FASH, IDES, or PAPR course)		3
Term Hours:		12
Total Hours:		121-122

- Students are expected to develop personal voices as artists based on an awareness of social, historical and critical issues.
- Students have the ability to think critically and to articulate their ideas via conversation, public speaking and writing.
- Students comprehend the potential impact of contemporary art on culture.

**Special requirements**

- Studio courses are designed to be taken in the following sequence: 200 level (basic), 300 level (intermediate) and 400 level (advanced). Instructors may ask you to withdraw from a course if you lack the appropriate background of knowledge and experience.

**Degree requirements for Painting and Printmaking, Bachelor of Fine Arts (B.F.A.)****General Education requirements****University Core Education Curriculum**

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

**Additional General Education requirements**

General education electives		9
Total Hours		9

**Collateral requirements****Art Foundation Program**

ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3
ARTF 139	Project	2

**Art history**

ARTF 115 & ARTF 116	Art History Survey and Art History Survey	6
Additional art history electives		9

**Additional requirement**

UNIV 101	Introduction to the University	1
Total Hours		30

**Major requirements**

PAPR 201	Painting From Observation	4
PAPR 211	Print Media I	4
PAPR 231	Drawing from Observation	4
PAPR 290	Concepts and Issues	2
PAPR 304	Paint Practice and Theory	4
or PAPR 314	Print Practice and Theory	
PAPR 402	Senior Degree Project	4
PAPR 490	Senior Seminar	2

**Painting and Printmaking, Bachelor of Fine Arts (B.F.A.) [VCUQ]****Learning outcomes**

Upon completing this program, students will know and know how to do the following:

- Students are expected to achieve technical proficiency in painting and printmaking, and possess the skill to translate their creative ideas through studio practice.

PAPR 300-level course intended to be either PAPR 301 or PAPR 311. Students may enroll in whichever course they do not take as an elective	4
PAPR 300- 400-level course in painting, printmaking or drawing	12
<b>Total Hours</b>	<b>40</b>

## Electives

Select thirteen elective credits	13
----------------------------------	----

## Studio electives

Select eight studio electives (outside of PAPR) <sup>1</sup>	8
<b>Total Hours</b>	<b>8</b>

<sup>1</sup> Studio courses outside painting and printmaking include: CRAF, SCPT, KINE, PHTO or GDES.

## Total minimum requirement 121 credits

### Electives

#### Intermediate printmaking electives

PAPR 311	Print Media II	4
PAPR 315	Printmaking, Intermediate (Etching)	4
PAPR 317	Printmaking, Intermediate (Lithography)	4
PAPR 319	Printmaking, Intermediate (Screenprinting)	4

#### Advanced painting electives

PAPR 301	Painting Strategies	4
PAPR 401	Painting Investigations	4

#### Advanced drawing electives

PAPR 331	Experiments in Drawing	4
PAPR 431	Drawing and the Model	4

#### Advanced printmaking electives

PAPR 409	Large Format Digital Printing	4
PAPR 415	Printmaking, Advanced (Etching)	4
PAPR 417	Printmaking, Advanced (Lithography)	4
PAPR 419	Printmaking, Advanced (Screenprinting)	4

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
ARTF 115	Art History Survey	3
ARTF 131	Drawing Studio	3
ARTF 132	Surface Research	3
ARTF 139	Project	1
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Quantitative literacy course (University Core)		3
Term Hours:		17

### Spring semester

ARTF 116	Art History Survey	3
ARTF 133	Space Research	3
ARTF 134	Time Studio	3

ARTF 139	Project	1
UNIV 112	Focused Inquiry II	3
Natural/physical science course (University Core)		3
Term Hours:		16

### Sophomore year

#### Fall semester

PAPR 201	Painting From Observation	4
PAPR 231	Drawing from Observation	4
PAPR 290	Concepts and Issues	2
UNIV 200	Inquiry and the Craft of Argument	3
Humanities/fine arts course (University Core)		3
Term Hours:		16

#### Spring semester

PAPR 211	Print Media I	4
General education elective		3
Elective		4
Social/behavioral science course (University Core)		3
Term Hours:		14

### Junior year

#### Fall semester

PAPR 301 or PAPR 311	Painting Strategies or Print Media II	4
Electives		6
Art history elective		3
Term Hours:		13

#### Spring semester

PAPR 304 or PAPR 314	Paint Practice and Theory or Print Practice and Theory	4
PAPR 300- or 400-level course		4
Art history elective		3
Studio elective (outside PAPR)		4
Term Hours:		15

### Senior year

#### Fall semester

Art history elective		3
PAPR 300- or 400-level courses		4
Elective		3
General education elective		3
Studio elective (outside PAPR)		4
Term Hours:		17

#### Spring semester

PAPR 402	Senior Degree Project	4
PAPR 490	Senior Seminar	2
PAPR 300- or 400-level course		4
General education elective		3
Term Hours:		13
Total Hours:		121

## Islamic art history, minor in – VCUQatar Campus

A minor in Islamic art history consists of 18 credits, which must include:

ARTF 115	Art History Survey	3
or ARTF 116	Art History Survey	
ARTH 260	Islamic Art Survey	3
ARTH 261	Islamic Art Survey	3
Select nine credits from any ARTH course at the 300 or 400 level that is open to non-majors <sup>1</sup>		9
Total Hours		18

<sup>1</sup> Visit [vcu.edu/courses](http://vcu.edu/courses) (<http://vcu.edu/courses>) for a list of all ARTH courses.

Only courses in which a student earns a minimum grade of C may be applied to the minor. A student may apply for the art history minor after successful completion of ARTF 115 or ARTF 116.

Students who have completed at least 6 credits of the 300-level courses required in the minor may be allowed into ARTH 465 or ARTH 466 with the permission of the department.

Note: This minor is offered only to students on the VCUQatar Campus.

## Honors Program at VCUQatar

Jesse Ulmer

Assistant professor and administrator

Email: [ulmerjg@vcu.edu](mailto:ulmerjg@vcu.edu)

Phone: +974 5527 2055

Website: [qatar.vcu.edu/honors-program](http://qatar.vcu.edu/honors-program) (<http://www.qatar.vcu.edu/honors-program>)

The Honors Program at VCUQatar is designed to fulfill the needs of talented and academically high-achieving undergraduate students. The program offers an advanced liberal education that cultivates interdisciplinary research, creativity, multicultural literacy, self-development, experiential learning and community-building. Students are expected to complete a number of honors-level courses in a diverse range of disciplines that will help prepare them for careers or graduate-level learning. The program provides students with a foundation in social and behavioral sciences, natural and physical sciences, the humanities, fine arts and design. Students will engage in advanced undergraduate research to produce innovative work that integrates concepts and approaches from multiple disciplines, a process that requires risk-taking and the pursuit of novel methods. Honors students are expected to learn how to adapt to changing environments and utilize emerging technologies. Moreover, honors students are expected to develop advanced levels of multicultural literacy and to develop the capacity to positively impact whatever groups and communities they find themselves in. These expectations form the objectives of the program and will serve as a basis for assessment.

In addition, the context and mission of the program represents a synthesis of the many institutions and cultures that surround and support it. As part of the Honors College in Richmond, Virginia, the Honors Program at VCUQatar offers students opportunities to exchange ideas, ask questions and explore values; as part of the VCU School of the Arts, the program champions artistic excellence and self-expression; and as part of VCUQatar and Qatar Foundation, the program strives

to contribute to the development of Qatar through creative innovation and collaboration. The end result of this unique convergence is an honors program deeply committed to developing cultural diversity and interdisciplinary study in a context of academic and creative excellence.

## Admission

Students from all undergraduate majors offered at VCUQatar are eligible to apply to the Honors Program if they meet the minimum criteria, which include a minimum 3.5 grade point average, a letter of recommendation from a VCUQatar faculty member and the submission of an application essay.

Students may apply to the Honors Program at VCUQatar as early as the first semester of their freshman year. Students must submit an online application to the VCU Honors College. Admission decisions are made jointly by the Honors College in Richmond and the Honors Program at VCUQatar.

## Graduation with University Honors

To graduate with the distinction of University Honors, students admitted to the program must complete a total of 24 honors credits:

- Liberal arts and sciences courses (15 credits)
  - Honors social and behavioral sciences: 3 credits
  - Honors natural and physical sciences: 3 credits
  - Honors literacy and critical thinking: 6 credits
  - Honors research methods: 3 credits
- Honors experiential learning project (3 credits)
- Honors course work in major course of study (6 credits)

To graduate with honors, members of the Honors Program at VCUQatar must meet the following criteria: 3.5 overall GPA (including every course **attempted**); 3.2 honors GPA (including every honors course **attempted**); the completion of the above curriculum; and successful completion and submission of an honors dossier.

Overall, students are encouraged to consult an Honors Program adviser to explore additional ways to earn honors credit that include honors independent study and non-honors to honors course contract options. More detailed information on these options can be found on the Honors College website at [honors.vcu.edu](http://honors.vcu.edu).

## Guidelines and regulations

To continue as a member of the Honors Program at VCUQatar, students must maintain a minimum cumulative GPA of 3.5. Should an honors student's cumulative GPA fall below 3.5, but not below 3.0, the student may be placed on honors probation for one semester.

# SCHOOL OF BUSINESS

A close-knit community within a leading urban, public university, the VCU School of Business enrolls 4,000 students in a wide range of bachelor's, master's, certificate and doctoral programs. The school ranks in the top 5 percent of business schools worldwide due to its accreditation by AACSB International. From its founding in 1937, the school has developed strong connections with the business community in Richmond and beyond, with students actively engaged in internships, corporate projects and learning from executives.

## Strategic plan

In 2015-16, the VCU School of Business launched a bold strategic plan, EPIC, to build on its strengths and ensure that the school's students are prepared to thrive in a changing world. As the business landscape grows increasingly complex, companies in every industry need creative solutions. Leaders are seeking to hire graduates who have a solid foundation in their chosen business discipline — combined with the ability to bring fresh thinking and a creative approach to solving problems.

## Our vision

Drive the future of business through the power of creativity.

## Our mission

To be a dynamic hub of business education and research, fueled by creativity and a commitment to preparing students to lead in a complex world.

## EPIC Pillars

Experiential learning, Problem-solving curricula, Impactful research, Creative culture

The School of Business, its programs and faculty have received national recognition from top publications such as U.S. News & World Report, the Princeton Review, Bloomberg Businessweek, The CEO Magazine and Advertising Age. In 2014, the top-ranked VCU Brandcenter joined the School of Business. Graduates from all programs are welcomed into the VCU Business Alumni Society.

## Administration

301 West Main Street  
P.O. Box 844000  
Richmond, Virginia 23284-4000  
Phone: (804) 828-1595  
Fax (804) 828-8884  
business.vcu.edu (<http://www.business.vcu.edu>)

**Ed Grier**  
Dean

**Kenneth B. Kahn, Ph.D.**  
Senior associate dean

**Jayaraman Vijayakumar, Ph.D.**  
Associate dean for graduate programs

**Shannon K. Mitchell, Ph.D.**  
Associate dean for undergraduate studies

**Nanda K. Rangan, Ph.D.**

Associate dean for international and strategic initiatives

## Accreditation

The School of Business is accredited by the Association to Advance Collegiate Schools of Business, which accredits programs of professional education in business at the collegiate level. AACSB International accreditation represents the highest standard of achievement for business schools, worldwide. Institutions that earn accreditation confirm their commitment to quality and continuous improvement through a rigorous and comprehensive peer review. AACSB International accreditation is the hallmark of excellence in management education.

The School of Business is the first school of business in the nation to gain accreditation from the Accreditation Board for Engineering and Technology for its undergraduate program in information systems.

## Financial aid, scholarships and awards

### Scholarships and awards

In addition to university scholarships, business students may apply and compete for scholarships awarded through School of Business endowed scholarship funds or through the various School of Business academic programs. For detailed information on scholarships and awards, visit the School of Business website.

## Cooperative education and internships

Business students are eligible for the university's cooperative education program. Qualified students placed with an employer will either alternate one semester of full-time study with one semester of full-time work or combine study with part-time work during the same semester. The School of Business also offers internships, allowing advanced students to pursue part-time work assignments with area employers.

## Assistantships

The School of Business offers a limited number of graduate assistantships to full-time students for the academic year. For further information, write to the Graduate Studies in Business Office.

Graduate students also are eligible for funds administered under the National Defense Loan and college work-study programs. For further information, write to Director of Financial Aid, Virginia Commonwealth University, Richmond, VA 23284-2526.

## Undergraduate information

### Undergraduate programs

The school offers undergraduate baccalaureate degree programs in accounting, business, economics, financial technology, information systems, real estate and marketing, each of which earns a Bachelor of Science.

Post-baccalaureate undergraduate certificates in accounting and information systems are also offered, as well as minors in general business and human resource management.

A minor in economics is offered by the College of Humanities and Sciences. Business majors (other than economics) are eligible for this minor. See the program listing for more information (p. 186).

Programs, degree levels and specializations are outlined below.

## Bachelor of Science

Accounting  
Business

- Finance
- Human resource management
- Management
  - Business administration
  - Entrepreneurship
  - International management
- Risk management and insurance
  - Corporate
  - Financial planning
- Supply chain management and analytics

Economics  
Financial technology

- Actuarial science
- Financial engineering

Information systems

Marketing

- General marketing
- Integrated marketing communications
- Personal selling and business marketing
- Product and brand management

Real estate

## Post-baccalaureate undergraduate certificates

Accounting  
Information systems

## Undergraduate certificate

International management studies (interdisciplinary program with School of World Studies)

## Minors

General business  
Human resource management

## Shared undergraduate business curriculum

The following programs have certain elements that are shared among them.

- **Accounting, Bachelor of Science (B.S.)**
- **Business, Bachelor of Science (B.S.), finance, human resource management, management (and sub-concentrations), risk management and insurance, and supply chain management and analytics concentrations**
- **Economics, Bachelor of Science (B.S.)**
- **Information Systems, Bachelor of Science (B.S.)**

- **Marketing, Bachelor of Science (B.S.), general marketing, integrated marketing communications, personal selling and business marketing, and product and brand management concentrations**
- **Real Estate, Bachelor of Science (B.S.)**

## Learning goals

The mission of the shared undergraduate business curriculum, in conjunction with universitywide general education requirements, is to provide students the knowledge, skills, opportunities and experiences needed as a framework for the various major programs of study.

The goals of the shared curriculum are:

- Effective communication
- A broad-based knowledge of business functions and processes
- Quantitative skills
- Critical-thinking and development of creative solutions to business problems
- A solid foundation for making responsible and ethical business decisions

## Learning outcomes

Upon completing this program, students will know how to do the following:

- Communicate successfully in a variety of business situations
- Demonstrate understanding of the basic functions of business
- Use data to support decision-making
- Lead and work effectively in teams
- Apply creative problem-solving techniques to business problems
- Use ethical principles while making business decisions

## Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program		54
ACCT 203	Introduction to Accounting I	6
& ACCT 204	and Introduction to Accounting II	
BUSN 201	Foundations of Business I	6
& BUSN 202	and Foundations of Business II	
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
Another INFO 16X course		
SCMA 212	Differential Calculus and Optimization for Business	3
or MATH 200	Calculus with Analytic Geometry	
UNIV 111	Focused Inquiry I	3



UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 16X requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Undergraduate Studies Office. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree.

Advanced business core flexible requirements are determined by the major program of study from the approved lists. See each program for specifics.

PSYC 214 and INTL 493 may not be counted toward a business degree.

## Degree requirements for Bachelor of Science degrees in accounting, business, economics, information systems, marketing and real estate

### Business foundation (63 credits)

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212	Differential Calculus and Optimization for Business	
or MATH 200	Calculus with Analytic Geometry	
Approved social/behavioral sciences		3-4

#### Business general education requirement

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 16X software course as specified by major		1

Business general education electives: Select credits from the approved list		3
Total Hours		37-40

### Additional Business Foundation requirements

ACCT 203	Introduction to Accounting I	6
& ACCT 204	and Introduction to Accounting II	
BUSN 201	Foundations of Business I	6
& BUSN 202	and Foundations of Business II	
Electives		11-14
Total Hours		23-26

### Advanced business program

#### Advanced business core – required for all majors

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

#### Advanced business core – flexible by major

Business law and ethics, as specified by the major		3
Information systems, as specified by the major		3
Interpersonal skills, as specified by the major		3
Quantitative approaches to business, as specified by the major		6

#### Major requirements

Major requirements		24
Total Hours		57

### Total minimum requirement 120 credits

## Sample business draft curriculum outline

### Freshman year

Fall semester		Hours
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
SCMA 171	Mathematical Applications for Business	3
UNIV 111	Focused Inquiry I	3
University Core Education Curriculum approved courses		6-8
Term Hours:		14-16

### Spring semester

BUSN 225	Winning Presentations	3
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 16x as specified by major		1
SCMA 212	Differential Calculus and Optimization for Business	3-4
or MATH 200	or Calculus with Analytic Geometry	
UNIV 112	Focused Inquiry II	3
University Core Education Curriculum approved course		3-4
Term Hours:		14-16

### Sophomore year

#### Fall semester

ACCT 203	Introduction to Accounting I	3
----------	------------------------------	---

BUSN 201	Foundations of Business I	3
ECON 210	Principles of Microeconomics	3
UNIV 200	Inquiry and the Craft of Argument	3
Business general education elective		3

Term Hours: 15

#### Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 202	Foundations of Business II	3
ECON 211	Principles of Macroeconomics	3
SCMA 301	Business Statistics I	3
Elective		0-3
Law and ethics, as specified by the major		3

Term Hours: 15-18

#### Junior year

##### Fall semester

MGMT 310	Managing People in Organizations	3
MKTG 301	Marketing Principles	3
SCMA 325	Organizational Communication	3
Major course		3
Quantitative approaches to business, as specified by the major		3

Term Hours: 15

##### Spring semester

FIRE 311	Financial Management	3
Elective		2-3
Information systems, as specified by the major		3
Interpersonal skills, as specified by the major		3
Major course		3

Term Hours: 14-15

#### Senior year

##### Fall semester

Electives		3
Major courses		9
Quantitative approaches to business, as specified by the major		3

Term Hours: 15

##### Spring semester

MGMT 434	Strategic Management	3
Electives		3
Major courses		9

Term Hours: 15

Total Hours: 117-125

## Business general education electives

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society
UNIV 222	Pseudoscience
UNIV 299	What's the Big Idea?

## Approved flexible advanced business core courses

### Business law and ethics

SCMA 323 Legal Environment of Business (unless otherwise specified) 3

Business major with risk management and insurance/corporate concentration: 3

FIRE 459 Insurance Law

Business major with risk management and insurance/financial planning concentration: 3

SCMA 323 Legal Environment of Business  
or FIRE 459 Insurance Law

Information systems major: 3

INFO 323 Ethical, Social and Legal Issues in Information Systems

Real estate major: 3

FIRE 325 Real Estate Law

### Information systems

INFO 360 Business Information Systems (unless otherwise specified) 3

Accounting major:

ACCT 307 Accounting Systems

Information systems majors: 3

INFO 361 Systems Analysis and Design

### Interpersonal skills

MGMT 319 Leadership (unless otherwise specified) 3

Accounting major: Select one of the following: 3

ACCT 409 Research and Communication for Accountants

BUSN 400 Principles of Consulting

BUSN 401 International Consulting Practicum

MGMT 319 Leadership

Business major with finance, risk management and insurance, or supply chain management and analytics concentrations: 3

MGMT 319 Leadership  
or SCMA 329 Introduction to Intercultural Communication

Economics major: 3

ECON 300 Contemporary Economic Issues

Information systems major: 3

INFO 461 Information Systems Planning and Project Management

Marketing major with personal selling and business marketing concentration: 3

MKTG 335 Introduction to Personal Selling

Real estate majors: Select one of the following: 3

MGMT 319	Leadership
MKTG 335	Introduction to Personal Selling
SCMA 329/INTL 327	Introduction to Intercultural Communication

#### Quantitative approaches to business

ECON 303 & SCMA 320	Managerial Economics and Production/Operations Management (unless otherwise specified)	6
---------------------	--	---

Accounting majors: Select two of the following: 6

ACCT 408	Accounting Decision Analytics
ECON 303	Managerial Economics
SCMA 302	Business Statistics II
SCMA 320	Production/Operations Management

Business major with finance or risk management and insurance concentrations: 6

FIRE 312 & FIRE 317	Financial Modeling and Investments
---------------------	------------------------------------

Business major with human resource management or management concentrations: 6

SCMA 302 & SCMA 320	Business Statistics II and Production/Operations Management
---------------------	---

Economics major: 6

ECON 403	Introduction to Mathematical Economics
or SCMA 302	Business Statistics II
ECON 501	Introduction to Econometrics
or SCMA 302	Business Statistics II

Information systems majors: 6

INFO 320 & SCMA 302	Business Intelligence and Data Mining and Business Statistics II
---------------------	--

Marketing major: 6

MKTG 310	Information for Marketing Decisions
SCMA 302	Business Statistics II
or SCMA 320	Production/Operations Management

Real estate major: 6

FIRE 312 & SCMA 302	Financial Modeling and Business Statistics II
---------------------	---

- Fostering a culture of intellectual curiosity and achievement
- Creating long-term, cohesive relationships within a community of highly motivated VCU students
- Partnering with local industry leaders to provide internships, seminars and professional mentoring

To earn business honors, students must complete business honors courses and fulfill all of the requirements to graduate with University Honors. Students who enter The Honors College with fewer than 54 credits must complete at least 15 credit hours of business honors courses. Students who enter The Honors College with 54 or more credit hours must complete at least 12 credit hours of business honors courses. Honors core requirements also vary depending on the number of credit hours earned at the time of admission to the VCU Honors College. Transfer students and freshmen are equally encouraged to apply. For complete details on honors program admission and graduation requirements, see [honors.vcu.edu](http://www.honors.vcu.edu) (<http://www.honors.vcu.edu>).

Current honors course offerings (<https://www.pubapps.vcu.edu/honors/academics/courses>), including business honors courses are listed on the Honors College website.

Business honors graduates will be recognized at Commencement with special regalia, and the distinction "Business Honors" will be noted on the transcript.

Inquires should be directed to the Office of Undergraduate Studies in the School of Business in Room B-1100 of Snead Hall.

## Post-baccalaureate undergraduate certificates

The School of Business at VCU offers post-baccalaureate undergraduate certificates in accounting and information systems. These certificate programs are designed for individuals who hold bachelor's degrees in other fields. By taking the courses required at the undergraduate level in one of the certificate concentrations, individuals are able to obtain an extensive knowledge of the subject.

Refer to individual program listings for certificate requirements.

### Application information

To apply, visit the Office of Admissions website. (<http://www.ugrad.vcu.edu/apply>)

Students cannot be accepted into a program until they have completed all the requirements for their bachelor's degree and have achieved a minimum 2.5 GPA in their undergraduate work.

### Academic regulations for School of Business post-baccalaureate undergraduate certificates

The following academic standards apply to students in the undergraduate certificate programs:

1. Candidates for the certificate are required to complete a minimum of 24 hours beyond the bachelor's degree, with a minimum of 24 credit hours of study to be taken while in the undergraduate certificate program at VCU.
2. All students admitted to a certificate program are assigned advisers. Students are required to work with their advisers to plan their

## Business honors

Undergraduate business majors may earn business honors. Any student enrolled in the VCU Honors College and in the business foundation program or with a major within the School of Business is eligible to participate.

The mission of the Business Honors Program is to provide a challenging experience for high-ability School of Business students that boosts creativity, strategic thinking, teamwork and leadership in collaboration with the VCU Honors College.

The Business Honors Program produces exceptional business graduates who are prepared to excel in any environment of their choosing. It will achieve this by:

certificate programs. Both the adviser and the associate dean for undergraduate studies must approve each student program or changes. Courses taken prior to approval are taken at the student's own risk. Each student is required to complete an approved program form and file it with the undergraduate studies office no later than the end of the first semester in which the student is admitted. Failure to do so may result in dismissal from the program.

3. All requirements for the certificate must be completed within five years from the date of admission or taking the first course in the program. This time limitation applies to both full- and part-time students. A maximum of two one-year extensions may be granted if satisfactory progress is demonstrated on the part of students requesting extensions. For extensions, write to the associate dean for undergraduate studies.
4. Students may not use the same course(s) for two certificates or the certificate and another program.
5. Grades and GPA requirements:
  - a. Certificate recipients must have received an overall grade-point average of 2.5 on credit hours attempted for the certificate at VCU. The grades of D or F are counted in computing the overall GPA but carry no credit.
  - b. Grades of A, B and C are passing grades; D is not a passing grade. Students who receive a grade of D or below on more than 20 percent of the credit hours attempted for the program will be terminated from their program.
  - c. Courses in which students have earned a grade of D or F must be repeated if these courses are needed for the program. The historical repeat course option in baccalaureate programs is not applicable to certificate programs.
  - d. Students who satisfy all the requirements except the 2.5 GPA may be allowed to take a maximum of six additional credit hours to raise the average. Students are required to get the approval of the adviser and the associate dean of undergraduate studies before attempting additional credit hours.
6. Transfer credits:
  - a. Transfer credit, including courses from VCU to be applied after acceptance in the program, is accepted at the discretion of the associate dean for undergraduate studies upon the recommendation of the student's adviser.
  - b. All transfer work, including courses from VCU, must be at the minimum a C grade.
  - c. CLEP examination credit is not accepted for the certificate programs.
  - d. Credits to be earned at other institutions after acceptance to the program must be approved in advance, and approval is granted at the discretion of the associate dean for undergraduate studies.
7. Students must continually demonstrate acceptable professional behavior to be retained in the program.

8. Students must apply to graduate using the Undergraduate Graduation Application Form. For deadlines, consult the university calendar.
9. The policies of the university regarding undergraduate degree programs will apply as the minimum when the certificate policy is not stated clearly in these policies. When in conflict, the stricter policy will apply in any case.

Student appeals for exceptions to policies or academic standards may be made in writing to:

Virginia Commonwealth University  
 School of Business  
 Associate Dean for Undergraduate Studies  
 P.O. Box 844000  
 Richmond, VA 23284-4000

## Academic policies

### Admission guidelines and deadlines

Students applying to the School of Business should have completed four years of high school mathematics and must follow the application submission dates for the university as stated in the "Admission to the University (p. 13)" section of this bulletin. School of Business degree programs are organized into two components – the foundation program and the advanced program.

Freshmen are admitted initially into the business foundation program. Business foundation students must apply for admission to the advanced program (and a major) and be accepted at the end of the semester in which they attempt at least their 60th credit hour, including transfer credits. Attempted hours include credit hours from courses in which a W, an F or any other grade has been assigned. This is reported in the transcript as "overall attempted hours." Details of minimum admission requirements for the advanced program can be found in the "Shared undergraduate business curriculum (p. 357)" page of this Bulletin.

Transfer students are admitted into the business foundation program by the Office of Undergraduate Admissions. Transfer students who are eligible for the advanced program and a major (based on transfer course work) apply during New Student Orientation. Those transfer students not immediately admitted to the advanced program and a major will enter as business foundation students. They must apply to the advanced program and a major following the minimum number of semesters needed to complete the general requirements and the school's core courses, as detailed in the "Shared undergraduate business curriculum (p. 357)" page of this Bulletin.

VCU students in other programs with fewer than 30 earned credit hours who wish to change into a business major follow the same admission deadlines as students admitted to the business foundation program as freshmen. VCU students with 30 or more earned hours at the time of the change of major follow the same admission guidelines and deadlines as transfer students.

Students who have not met admission requirements for the advanced program by the deadlines described above will be separated from the business program and asked to seek a major outside of the School of Business. This in itself does not preclude the student from completing another major at VCU, including the economics major offered through the College of Humanities and Sciences.

Students may appeal the separation via the associate dean for undergraduate studies in the School of Business. The associate dean may, at his or her discretion, extend the time period needed to meet the requirements, generally by only one semester. If this extension is not granted and the student wishes to appeal the associate dean's decision, the appeal will be heard by the School Undergraduate Programs Committee, which may establish a subcommittee for this purpose. A student who wishes to appeal must submit his or her appeal prior to the start of the next semester in which the student registers for classes. SUPC shall schedule appropriate meeting dates and deadlines for students to submit their appeals and students must adhere to those deadlines. Students who have missed their deadline to declare a major in business or who have been separated from the business program may appeal to re-enter the School of Business no sooner than 24 months after the end of the student's most recent semester in the program.

Application to the advanced program and a major is made by filing a change of major request in the Office of Undergraduate Studies, Room B1100, Snead Hall. If approved, the change of major becomes effective at the beginning of the following semester.

## Enrollment in business courses by nonbusiness majors

Only Business Foundation students are allowed to take BUSN 225. All VCU students may enroll in the other 100- and 200-level courses in the School of Business provided prerequisites are met.

The following 300- and 400- level courses are open to all students who have met the published prerequisites and restrictions:

FIRE 301	Personal Financial Planning	3
FIRE 305	Principles of Real Estate	3
FIRE 309	Risk and Insurance	3
FIRE 449	Employee Benefit Planning	3
FIRE/MGMT 444	Occupational Safety, Health and Security	3
INFO 300	Information Technology Infrastructure	3
INFO 350	Intermediate Programming	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 302	Business Statistics II	3
SCMA 323	Legal Environment of Business	3

All other 300- and 400-level courses are restricted to declared majors within the School of Business and students who are required to take specified business courses for their programs of study. Business Foundation students may be eligible to enroll in 300- and 400-level courses if they meet certain requirements. Business Foundation students must request overrides to register for the class with their adviser in the Office of Undergraduate Studies or University Academic Advising.

Nondegree-seeking degree holder students and Bachelor of Interdisciplinary Studies students with approved programs of study that include upper-level business courses not listed above may request an override from [go.vcu.edu/override](http://go.vcu.edu/override) (<http://go.vcu.edu/override>).

## Limitation on total credits earned by nonbusiness majors

The number of credits that nonbusiness majors may accumulate from enrollment in classes offered by the School of Business is limited to a

maximum of 25 percent of the total credits required for graduation in their programs. Students who wish to present more than 25 percent of their course work in business and/or economics must be admitted to a major in the School of Business, must complete a minimum of 27 credits from the School of Business advanced program after acceptance into the major and must meet all graduation requirements of the school. This does not limit the number of courses in economics for economics majors in the College of Humanities and Sciences.

## Transfer policies

In addition to meeting the general requirements of the university and the School of Business, transfer students who plan to enroll in an undergraduate program in business must comply with the following requirements:

1. Incoming transfer students who are otherwise qualified for admission to the advanced program will be evaluated based on the cumulative GPA they had at their previous institution(s). Once transfer students have completed courses at VCU, however, their admission to the advanced program is evaluated using their cumulative GPA at VCU.
2. Transfer of business and economics courses from two-year institutions is limited to courses offered by the School of Business in the lower division (freshman and sophomore years). An exception is made for statistics or business statistics courses that transfer to VCU as SCMA 301 or STAT 210 or higher. See the online VCU Transfer Guide for details.
3. For a course to be considered for acceptance into the advanced program, it must be completed in a business program that is accredited by AACSB International and is at a four-year university. Any other transfer request must be reviewed and approved by the associate dean for undergraduate studies or their designee.
4. Credits earned at other institutions carrying a grade of D are not accepted for transfer.
5. Transfer credits may be applied to no more than 12 hours of combined credit in the flexible advanced core and the major.

## Study abroad credits

Because the experience expands students' perspectives, the School of Business encourages students to study abroad and (with prior approval) to transfer business credits back to VCU. However, note that international students will not be approved to transfer 300- and 400-level business credits from their home country as "study abroad" credit.

## Student advising

Freshman and continuing sophomore business students are assigned an adviser in University College. All other business students are assigned an adviser in the Office of Undergraduate Studies to assist students in planning course work, becoming familiar with university services, interpreting university rules and procedures and clarifying career objectives. Students are also strongly encouraged to consult with faculty in their major field of study for detailed information on course content and career paths.

While the faculty of the School of Business provides information and advice, the student is ultimately responsible for knowing and satisfying the degree requirements of his or her program. Students should familiarize themselves with curriculum requirements, appropriate sequencing of courses and course prerequisites detailed in the "Shared



undergraduate business curriculum (p. 357)” page of this Bulletin and university academic regulations covered in the “Academic regulations and general degree requirements (p. 49)” sections of this bulletin.

## Double majors

A double major fulfills the requirements of two majors concurrently. To earn a degree with a double major, the student must fulfill all the requirements of the degree programs of which the majors are a part. Students can declare a double major in the School of Business through the change of major process in the Office of Undergraduate Studies. The request for a double major should be approved before the student begins courses in the second major. For a second major in the School of Business, the student must complete all courses required for each major. Only one course overlap is allowed in the major requirements.

## Dual degree

It is possible to obtain a dual degree (p. 54) in two business majors at the same time, resulting in two diplomas.

## Laptop computer requirement

Entering freshmen and transfer students are required to purchase a laptop computer capable of meeting School of Business specifications. Information on the minimum required laptop specifications and the required software can be obtained from the Technology section of the School of Business website.

## General business, minor in

The minor in general business is for nonbusiness majors and requires a minimum of 18 credits. Students must attain a minimum cumulative GPA of 2.0 in these courses.

It is suggested that students take the foundation courses first.

ACCT 202 and ECON 203 are the recommended courses. If a student wishes to become a business major, ACCT 202 cannot be applied to the business program. ECON 203 with a minimum grade of B can be applied to the business program. Also note that students may receive credit for only two of the following three courses: ECON 203, ECON 210 or ECON 211. ACCT 205 and ECON 205 are recommended for engineering students.

FIRE 311 has the following prerequisites: SCMA 212 or MATH 200; and ACCT 203 or ACCT 202 (for nonbusiness majors). This course is restricted to students who have completed at least 54 credit hours (junior standing) or 24 credits with minimum cumulative GPA of 2.5.

INFO 160 and junior standing are prerequisites to INFO 360.

Junior standing is required for MGMT 319.

All students entering junior-level business and economics courses are expected to have competency in computer-based word processing and spreadsheet skills.

Students who would like to apply transfer credits toward the general business minor will be limited to no more than one-half the total required number of credits.

## Course requirements for minor in general business

### Foundation courses

Select one of the following accounting courses:		3
ACCT 202	Accounting for Non-business Majors	
ACCT 203	Introduction to Accounting I	
ACCT 204	Introduction to Accounting II	
ACCT 205	Introductory Accounting Survey	
ACCT 507	Fundamentals of Accounting	
Select one of the following economics courses:		3
ECON 203	Introduction to Economics	
ECON 205	The Economics of Product Development and Markets	
ECON 210	Principles of Microeconomics	
ECON 211	Principles of Macroeconomics	
ECON 500	Concepts in Economics	
<b>Finance/insurance elective</b>		
Select one of the following:		3
FIRE 301	Personal Financial Planning	
FIRE 305	Principles of Real Estate	
FIRE 309	Risk and Insurance	
FIRE 311	Financial Management	
<b>General business electives</b>		
Select three of the following:		9
INFO 360	Business Information Systems	
MGMT 310	Managing People in Organizations	
MGMT 319	Leadership	
MKTG 301	Marketing Principles	
SCMA 323	Legal Environment of Business	
Total Hours		18

## Department of Accounting

**Carolyn S. Norman, Ph.D.**

Chair

[business.vcu.edu/accounting.html](http://business.vcu.edu/accounting.html) (<http://business.vcu.edu/accounting.html>)

The future development of the accounting profession depends upon the quality of the educational foundation on which it rests. The Department of Accounting is committed to the support of professional accounting through the delivery of educational experiences directed toward practice and through research that addresses the important policy issues of the day.

The mission of the department is to prepare students for careers in accounting, to interpret and expand accounting knowledge, and to render service to the profession and communities. The department does so by:

1. Providing a learning environment in which students are encouraged to interact with others in identifying and solving accounting and business problems.
2. Investigating, developing and sharing knowledge, which has the potential for significant influence on accounting, business and education.
3. Interacting with the accounting profession, the business community and the community at large.

• Accounting, Bachelor of Science (B.S.) (p. 364)

- Accounting, Certificate in (Post-baccalaureate undergraduate certificate) (p. 367)

## Accounting, Bachelor of Science (B.S.)

The major in accounting is designed to prepare students for entry-level positions in accounting. This program will qualify graduates to sit for the Uniform Certified Public Accountant Examination in Virginia. However, certification requires 150 hours of college credits. Most public accounting firms give hiring preference to applicants who have completed the full 150 hours prior to starting work.

### Learning goals

- To support career advancement over time by giving our students the academic foundation in information systems needed for continued professional development.
- To help students develop the professional skills that will be needed by the businesses and organizations that hire our graduates.
- To help our students develop ethical awareness so that they are able to deal with an ethical dilemma in the workplace.
- Graduates will possess the ability to analyze the ethical dimensions of an accounting issue.
- Graduates will be able to effectively communicate financial information.
- Graduates will be able to effectively analyze accounting information and understand the impact of accounting information in a business context.

### Learning outcomes

#### Upon completing this program:

- Graduates will be able to understand the role of information systems and information technology in the organization, especially as a source of information.
- Graduates will be able to understand the value of, and be able to use, financial/accounting data to make decisions at both strategic and operating levels within the context of their discipline-specific knowledge.
- Graduates will be able to communicate effectively both orally and in writing.
- Graduates will be able to understand the importance to themselves, their organization and the larger community of working effectively in teams.
- Graduates will be able to use the appropriate quantitative/statistical analysis and reasoning to make business decisions.
- Graduates will be able to demonstrate an ability to respond appropriately to ethical dilemmas in business. From a scenario (i.e., what is good for some consumers might not be good for society as a whole), the student will be required to identify both sides of the dilemma, state what action they would recommend and incorporate the marketing concept and the American Marketing Association Code of Ethics in developing their recommendation.
- Graduates will demonstrate the ability to effectively communicate ideas and analysis of accounting problems. Students can demonstrate this ability either in writing or in oral presentations (e.g., writing memos, thought papers or other types of business correspondence; presenting case analyses, etc.).
- Graduates will demonstrate an understanding of the core business and strategic concepts involved in accounting. Specifically, students

need to comprehend the impact of information systems on the profession and to leverage technology for decision-making.

- Graduates will demonstrate the ability to effectively identify and communicate accounting ethical issues; evaluate information in a manner free of distortion, personal bias or conflicts of interest; recognize situations where professional ethical standards apply; respect confidentiality.
- Graduates will demonstrate the ability to use analytical reasoning to comprehend and communicate problems; evaluate the significance of evidence or facts; verify information for problem definition and solution; propose and evaluate alternative solutions.
- Graduates will demonstrate a broad base of knowledge across accounting topics and be able to apply that knowledge in a variety of contexts.

### Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program		54
ACCT 203	Introduction to Accounting I	6
& ACCT 204	and Introduction to Accounting II	
BUSN 201	Foundations of Business I	6
& BUSN 202	and Foundations of Business II	
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
SCMA 212	Differential Calculus and Optimization for Business	3
or MATH 200	Calculus with Analytic Geometry	
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 165 requirements may be waived upon successful completion of a Knowledge Equivalency Test

administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree.

PSYC 214 and INTL 493 may not be counted toward a business degree.

All upper-level accounting courses with a prerequisite course require a minimum grade of C in the prerequisite course and they following must be fulfilled:

- Students must have received a minimum grade of C in all required accounting courses.
- Required accounting courses in which students earn a grade of D or F must be repeated.
- Students must achieve a 2.5 GPA in upper-level ACCT courses to graduate.

## Degree requirements for Accounting, Bachelor of Science (B.S.)

### Business Foundation

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212	Differential Calculus and Optimization for Business	
or MATH 200	Calculus with Analytic Geometry	
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
Business General Education electives (Select credits from the approved list.)		3
Total Hours		16

#### Additional Business Foundation requirements

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
SCMA 302	Business Statistics II	3

Open electives	8-11
Total Hours	23-26

## Advanced business program

### Advanced business core

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

### Major requirements

Advanced business core (flexible by major)

ACCT 307	Accounting Systems	3
SCMA 323	Legal Environment of Business	3

Select two of the following:

ACCT 408	Accounting Decision Analytics	
ECON 303	Managerial Economics	
SCMA 302	Business Statistics II	
SCMA 320	Production/Operations Management	

Select one of the following:

ACCT 409	Research and Communication for Accountants	3
BUSN 400	Principles of Consulting	
BUSN 401	International Consulting Practicum	
MGMT 319	Leadership	

### Major-specific courses

ACCT 303	Intermediate Accounting I	3
ACCT 304	Intermediate Accounting II	3
ACCT 305	Intermediate Accounting III	3
ACCT 306	Cost Accounting	3
ACCT 405	Tax Accounting Principles	3
ACCT 406	Auditing	3

Approved accounting elective

Approved technology elective	3
------------------------------	---

Total Hours 57

## Total minimum requirement 120 credits

### Business general education electives

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society

UNIV 222	Pseudoscience	
UNIV 299	What's the Big Idea?	

**Approved accounting electives**

Select one course:		3
ACCT 402	Advanced Cost Accounting	
ACCT 403	Management Control Systems	
ACCT 408	Accounting Decision Analytics	
ACCT 410	Advanced Tax Accounting	
ACCT 413	Advanced Accounting	

**Approved technology electives**

Select one course:		3
SCMA 302	Business Statistics II	
SCMA 303	Introduction to Analytics	
SCMA 339	Quantitative Solutions for Management	
INFO 320	Business Intelligence and Data Mining	

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Freshman year**

<b>Fall semester</b>		<b>Hours</b>
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
SCMA 171	Mathematical Applications for Business	3
UNIV 111	Focused Inquiry I	3
Approved University Core Education Curriculum courses		6-8
Term Hours:		14-16
<b>Spring semester</b>		
BUSN 225	Winning Presentations	3
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business or Calculus with Analytic Geometry	3-4
UNIV 112	Focused Inquiry II	3
Approved University Core Education Curriculum course		3-4
Term Hours:		14-16

**Sophomore year**

<b>Fall semester</b>		
ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business I	3
ECON 210	Principles of Microeconomics	3
UNIV 200	Inquiry and the Craft of Argument	3
Business General Education elective		3
Term Hours:		15
<b>Spring semester</b>		
ACCT 204	Introduction to Accounting II	3
BUSN 202	Foundations of Business II	3
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3

Elective	0-2
Term Hours:	15-17

**Junior year**

<b>Fall semester</b>		
ACCT 303	Intermediate Accounting I	3
ACCT 306	Cost Accounting	3
ACCT 405	Tax Accounting Principles	3
MGMT 310	Managing People in Organizations	3
SCMA 325	Organizational Communication	3
Term Hours:		15
<b>Spring semester</b>		
ACCT 304	Intermediate Accounting II	3
ACCT 307	Accounting Systems	3
FIRE 311	Financial Management	3
Approved accounting elective		3
Elective		2-3
Term Hours:		14-15

**Senior year**

<b>Fall semester</b>		
ACCT 305	Intermediate Accounting III	3
ACCT 408 or ECON 303 or SCMA 302 or SCMA 320	Accounting Decision Analytics or Managerial Economics or Business Statistics II or Production/Operations Management	3
ACCT 409 or BUSN 400 or BUSN 401 or MGMT 319	Research and Communication for Accountants or Principles of Consulting or International Consulting Practicum or Leadership	3
Approved accounting elective		3
Elective		3
Term Hours:		15
<b>Spring semester</b>		
ACCT 406	Auditing	3
ACCT 408 or ECON 303 or SCMA 302 or SCMA 320	Accounting Decision Analytics or Managerial Economics or Business Statistics II or Production/Operations Management	3
MGMT 434	Strategic Management	3
SCMA 323	Legal Environment of Business	3
Elective		3
Term Hours:		15
Total Hours:		117-124

**Total minimum requirement 120 credits**

## Accounting, Certificate in (Post-baccalaureate undergraduate certificate)

The Post-baccalaureate Undergraduate Certificate in Accounting is designed for individuals who want an extensive knowledge of accounting and hold bachelor's degrees in other fields. Additionally, graduates are well-qualified to sit for the Uniform Certified Public Accountant Examination in Virginia. Candidates for the certificate are required to complete 16 courses (48 credit hours). A maximum of eight courses (24 credit hours) may be waived if equivalent courses have been completed as part of a bachelor's degree. A minimum of 24 credit hours of study must be taken at VCU after acceptance into the certificate program.

For additional information, please visit the School of Business website at [business.vcu.edu/undergraduate-studies/prospective-certificate-students/undergraduate-certificates/post-baccalaureate-certificate-in-accounting](http://business.vcu.edu/undergraduate-studies/prospective-certificate-students/undergraduate-certificates/post-baccalaureate-certificate-in-accounting) (<http://business.vcu.edu/undergraduate-studies/prospective-certificate-students/undergraduate-certificates/post-baccalaureate-certificate-in-accounting>).

### Learning outcomes

Upon completing this program:

- Graduates will be able to understand the role of information systems and information technology in the organization, especially as a source of information.
- Graduates will be able to understand the value of, and be able to use, financial/accounting data to make decisions at both strategic and operating levels within the context of their discipline-specific knowledge.
- Graduates will be able to communicate effectively both orally and in writing.
- Graduates will be able to understand the importance to themselves, their organization and the larger community of working effectively in teams.
- Graduates will be able to use the appropriate quantitative/statistical analysis and reasoning to make business decisions.
- Graduates will be able to demonstrate an ability to respond appropriately to ethical dilemmas in business. From a scenario (i.e., what is good for some consumers might not be good for society as a whole), the student will be required to identify both sides of the dilemma, state what action they would recommend and incorporate the marketing concept and the American Marketing Association Code of Ethics in developing their recommendation.
- Graduates will be able to demonstrate the ability to effectively communicate ideas and analysis of accounting problems. Students can demonstrate this ability either in writing or in oral presentations (e.g., writing memos, thought papers or other types of business correspondence; presenting case analyses, etc.).
- Graduates will be able to demonstrate an understanding of the core business and strategic concepts involved in accounting. Specifically, students need to comprehend the impact of information systems on the profession and to leverage technology for decision-making.
- Graduates will be able to demonstrate the ability to effectively identify and communicate accounting ethical issues; evaluate information in a manner free of distortion, personal bias or conflicts of interest; recognize situations where professional ethical standards apply; respect confidentiality.

- Graduates will be able to demonstrate the ability to use analytical reasoning to comprehend and communicate problems; evaluate the significance of evidence or facts; verify information for problem definition and solution; propose and evaluate alternative solutions.
- Graduates will be able to demonstrate a broad base of knowledge across accounting topics and be able to apply that knowledge in a variety of contexts.

### Special requirements

Students cannot be accepted into a program until they have completed all the requirements for their bachelor's degree and have achieved a minimum GPA of 2.5 in their undergraduate work.

After acceptance in the program, certificate candidates are required to complete a minimum of 24 credit hours of their program at VCU.

Academic regulations for School of Business post-baccalaureate undergraduate certificates can be found in the school's Undergraduate information (p. 356) section of this bulletin.

## Degree requirements for Certificate in Accounting

### Certificate requirements

ACCT 303	Intermediate Accounting I	3
ACCT 304	Intermediate Accounting II	3
ACCT 305	Intermediate Accounting III	3
ACCT 306	Cost Accounting	3
ACCT 307	Accounting Systems	3
ACCT 405	Tax Accounting Principles	3
ACCT 406	Auditing	3
SCMA 323	Legal Environment of Business	3
Accounting elective (select one course from the list below)		3
Business electives		21
Total Hours		48

### Total minimum requirement 48 credits

### Sample plan of study

#### Year one

Fall semester		Hours
ACCT 303	Intermediate Accounting I	3
Business electives		9
Term Hours:		12

#### Spring semester

ACCT 304	Intermediate Accounting II	3
ACCT 306	Cost Accounting	3
ACCT 405	Tax Accounting Principles	3
Business elective		3
Term Hours:		12

#### Year two

Fall semester		Hours
ACCT 307	Accounting Systems	3
Accounting elective		3
Business electives		6
Term Hours:		12



**Spring semester**

ACCT 305	Intermediate Accounting III	3
ACCT 406	Auditing	3
SCMA 323	Legal Environment of Business	3
Business elective		3
Term Hours:		12
Total Hours:		48

**Electives****Accounting electives**

Select one of the following: 3

ACCT 401	Governmental and Not-for-profit Accounting
ACCT 402	Advanced Cost Accounting
ACCT 403	Management Control Systems
ACCT 408	Accounting Decision Analytics
ACCT 410	Advanced Tax Accounting
ACCT 413	Advanced Accounting

**Business electives**

Select seven non-accounting three-credit business courses (must be 300- or 400-level) from the following: 21

ECON 303	Managerial Economics
FIRE 309	Risk and Insurance
FIRE 311	Financial Management
FIRE 316	International Financial Management
FIRE 317	Investments
FIRE 321	Intermediate Financial Management
MGMT 319	Leadership
MGMT 321	Survey of Entrepreneurship
MGMT 331	Human Resource Management
MGMT 389	Managerial Skills Development
MGMT/INTL 418	International Management
MKTG 301	Marketing Principles
SCMA 320	Production/Operations Management
SCMA 325	Organizational Communication
SCMA 339	Quantitative Solutions for Management

## Department of Economics

**Carol Scotese**

Associate professor and chair

[business.vcu.edu/departments-and-centers/economics](http://business.vcu.edu/departments-and-centers/economics) (<http://business.vcu.edu/departments-and-centers/economics>)

The Department of Economics provides instruction for degree programs at the baccalaureate, master's and doctoral level. The faculty works to develop in students the ability to use economic reasoning to understand and analyze business and economic phenomena and policies — the skills needed for careers in a rapidly changing world. To enhance the educational process and to broaden the frontiers of knowledge, faculty members conduct basic and applied research and provide academic and professional service to the university and professional communities.

- Economics, Bachelor of Science (B.S.) [School of Business] (p. 368)

## Economics, Bachelor of Science (B.S.) [School of Business]

Economics is the science of human choice, the study of how scarce resources are allocated among competing uses to satisfy human wants. Since many choices analyzed are made by or affect business decision makers, economics is a unique blend of liberal arts and business. Therefore, the Department of Economics offers an undergraduate major in both the College of Humanities and Sciences and the School of Business. The major in the College of Humanities and Sciences is designed for students who desire the flexibility and breadth that is associated with a liberal arts degree. Students who want to combine training in economics with exposure to the business disciplines should consider the major in the School of Business.

Undergraduate work in economics is excellent preparation for careers in business, government and teaching, as well as for graduate work in economics and professional schools such as law, public administration and medicine. Specialization in economics prepares students for careers that emphasize analytical thinking, a broad understanding of the economy and business organizations and the proper choice of policies by governments and business enterprises. Because of their analytical, quantitative and decision-making skills, students who major in economics are sought after for a wide array of positions in management and sales. The specific skills they acquire also provide employment opportunities in large organizations with departments that forecast business conditions and analyze economic data of special interest to the organizations.

The mission of the B.S. in Economics is to provide undergraduate students with economic knowledge and skills that will enable them to compete successfully in changing regional, national and global economic environments.

### Learning goals

- Critical thinking
- Quantitative proficiency
- Communication

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Students will solve key microeconomic problems.
- Students will solve key macroeconomic problems.
- Students will be able to interpret and analyze data and express economic relationships using graphs, equations and words.
- Students will demonstrate strong oral and written communication skills.
- Students will be able to employ economic models and data to analyze questions of economic significance.

### Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
SCMA 212	Differential Calculus and Optimization for Business	3
or MATH 200	Calculus with Analytic Geometry	
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 165 requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree.

PSYC 214 and INTL 493 may not be counted toward a business degree.

## Degree requirements for Economics, Bachelor of Science (B.S.)

### Business foundation

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212	Differential Calculus and Optimization for Business	
or MATH 200	Calculus with Analytic Geometry	

Approved social/behavioral sciences	3-4
Total Hours	21-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
Business General Education electives (Select credits from the approved list.)		3
Total Hours		16

#### Additional Business Foundation requirements

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
SCMA 302	Business Statistics II	3
Open electives		8-11
Total Hours		23-26

## Advanced business program

#### Advanced business core

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

#### Major requirements

##### Advanced core (flexible by major)

ECON 300	Contemporary Economic Issues	3
ECON 403	Introduction to Mathematical Economics	3
or SCMA 320	Production/Operations Management	
ECON 501	Introduction to Econometrics	3
or SCMA 302	Business Statistics II	
INFO 360	Business Information Systems	3
SCMA 323	Legal Environment of Business	3

##### Major-specific courses

ECON 301	Microeconomic Theory	3
ECON 302	Macroeconomic Theory	3
Select one of the following:		3
ECON 431	Labor Economics	
ECON 489	Senior Seminar in Economics	
ECON 441	Experimental Economics	

Approved economics electives: select five 300- or 400-level economics courses. <sup>1</sup>	15
<b>Total Hours</b>	<b>57</b>

<sup>1</sup> ECON 501 may be used as an elective if SCMA 302 is taken as a required course. ECON 403 may be used as an elective if SCMA 320 is taken as a required course. BUSN 400 and BUSN 401 may be used as electives for students enrolled in the International Consulting Program.

## Total minimum requirement 120 credits

### Business general education electives

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society
UNIV 222	Pseudoscience
UNIV 299	What's the Big Idea?

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
SCMA 171	Mathematical Applications for Business	3
UNIV 111	Focused Inquiry I	3
Approved University Core Education Curriculum courses		6-8
Term Hours:		14-16

### Spring semester

BUSN 225	Winning Presentations	3
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business or Calculus with Analytic Geometry	3-4
UNIV 112	Focused Inquiry II	3
Approved University Core Education Curriculum course		3-4
Term Hours:		14-16

### Sophomore year

#### Fall semester

ACCT 203	Introduction to Accounting I	3
----------	------------------------------	---

BUSN 201	Foundations of Business I	3
ECON 210	Principles of Microeconomics	3
UNIV 200	Inquiry and the Craft of Argument	3
Business General Education elective		3
Term Hours:		15

### Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 202	Foundations of Business II	3
ECON 211	Principles of Macroeconomics	3
SCMA 301	Business Statistics I	3
SCMA 323	Legal Environment of Business	3
Elective		0-2
Term Hours:		15-17

### Junior year

#### Fall semester

ECON 300	Contemporary Economic Issues	3
ECON 301	Microeconomic Theory	3
ECON 403 or SCMA 320	Introduction to Mathematical Economics or Production/Operations Management	3
MGMT 310	Managing People in Organizations	3
SCMA 325	Organizational Communication	3
Term Hours:		15

### Spring semester

ECON 302	Macroeconomic Theory	3
FIRE 311	Financial Management	3
INFO 360	Business Information Systems	3
MKTG 301	Marketing Principles	3
Approved economics elective		3
Term Hours:		15

### Senior year

#### Fall semester

ECON 501 or SCMA 302	Introduction to Econometrics or Business Statistics II	3
Approved economics electives		9
Elective		3
Term Hours:		15

### Spring semester

MGMT 434	Strategic Management	3
ECON 431 or ECON 489 or ECON 441	Labor Economics or Senior Seminar in Economics or Experimental Economics	3
Approved economics elective		3
Electives		6
Term Hours:		15
Total Hours:		118-124

## Total minimum requirement 120 credits

## Department of Finance, Insurance and Real Estate

**Daniel P. Salandro, Ph.D.**

Associate professor and chair

[business.vcu.edu/departments-and-centers/finance-insurance-and-real-estate-fire](http://business.vcu.edu/departments-and-centers/finance-insurance-and-real-estate-fire) (<http://business.vcu.edu/departments-and-centers/finance-insurance-and-real-estate-fire>)

The Department of Finance, Insurance and Real Estate delivers knowledge to students in all programs offered by the School of Business and contributes to the expansion of knowledge by engaging in scholarly activity. The department provides core courses as well as majors, minors and concentrations. In addition, the department develops and delivers courses in continuing professional education for practitioners seeking to upgrade their skills and/or attempting to achieve professional certification.

- Business, Bachelor of Science (B.S.) with a concentration in:
  - Finance (p. 371)
  - Risk management and insurance/corporate (p. 373)
  - Risk management and insurance/financial planning (p. 376)
- Financial Technology, Bachelor of Science (B.S.) with a concentration in:
  - Actuarial science (p. 379)
  - Financial engineering (p. 381)
- Real Estate, Bachelor of Science (B.S.) (p. 383)

## Business, Bachelor of Science (B.S.) with a concentration in finance

The concentration in finance prepares students for graduate-level study of finance and for careers in corporate finance, the securities industry, banking, financial planning, insurance/risk management and graduate-level study of finance.

### Learning goals

The program is designed to help students develop skills in financial management and investments. Graduates will be able to analyze and communicate findings on complex financial issues.

### Learning outcomes

**Upon completing this program:**

- Students will be able to identify and use relevant data to calculate appropriate quantitative measures that help in making informed financial decisions.
- Students will be able to describe and expound on several financial solutions in a structured, organized and deliberate manner with comparisons, anecdotal evidence and descriptive analysis.
- Students will be able to express the analytic, quantitative and ethical dimensions of a business problem and proposed solutions in a clear, well-organized manner that is free of bias or distortions.

- Students will be able to identify and analyze ethical dimensions of a business situation and relate those dimensions to general and professional ethical standards.
- Student will develop a global perspective regarding the financial management of firms conducting business and investing across national borders.

## Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program		54
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
SCMA 212	Differential Calculus and Optimization for Business	3
or MATH 200	Calculus with Analytic Geometry	
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 165 requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree.

PSYC 214 and INTL 493 may not be counted toward a business degree.

Students must receive a minimum grade of C in FIRE 317, FIRE 321 and FIRE 441 and must have a minimum GPA of 2.0 in the remainder of the finance concentration requirements.

## Degree requirements for Business, Bachelor of Science (B.S.) with a concentration in finance

### Business foundation

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212	Differential Calculus and Optimization for Business	
or MATH 200	Calculus with Analytic Geometry	
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
Business General Education elective (Select credits from the approved list.)		3
Total Hours		16

#### Additional Business Foundation requirements

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
SCMA 302	Business Statistics II	3
Open electives		8-11
Total Hours		23-26

### Advanced business program

#### Advanced business core

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

#### Major requirements

Advanced core (flexible by major)

FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
or SCMA 329	Introduction to Intercultural Communication	
Select one of the following:		3
SCMA 323	Legal Environment of Business	
FIRE 325	Real Estate Law	
FIRE 459	Insurance Law	
Major-specific courses		
FIRE 316	International Financial Management	3
or BUSN 401	International Consulting Practicum	
FIRE 321	Intermediate Financial Management	3
FIRE 417	Security Analysis and Portfolio Management	3
FIRE 441	Funds Management in Financial Institutions	3
FIRE 451	Options, Futures and Swaps	3
FIRE 461	Cases in Financial Management	3
FIRE electives		6
Total Hours		57

### Total minimum requirement 120 credits

#### Business general education electives

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRDL course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society
UNIV 222	Pseudoscience
UNIV 299	What's the Big Idea?

#### Approved finance electives

ACCT 303	Intermediate Accounting I	3
ACCT 306	Cost Accounting	3
BUSN 400 & BUSN 401	Principles of Consulting and International Consulting Practicum (must get credit for both courses to count toward degree completion)	6
ECON 307	Money and Banking	3
ECON 402	Business Cycles and Forecasting	3
FIRE 309	Risk and Insurance	3
FIRE/INTL 413	Comparative Financial Systems	3
FIRE 419	Advanced Risk and Insurance	3
FIRE 429	Property and Liability Insurance	3



FIRE 439	Life and Health Insurance	3
FIRE 435	Real Estate Finance and Capital Markets	3
FIRE 479	Managing Financial Risk	3
FIRE 491	Topics in Finance, Insurance and Real Estate	1-3
FIRE 493	Internship in Finance, Insurance and Real Estate (requires departmental approval)	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
SCMA 171	Mathematical Applications for Business	3
UNIV 111	Focused Inquiry I	3
Approved University Core Education Curriculum courses		6-8
Term Hours:		14-16

#### Spring semester

BUSN 225	Winning Presentations	3
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
MATH 200 or SCMA 212	Calculus with Analytic Geometry or Differential Calculus and Optimization for Business	3-4
UNIV 112	Focused Inquiry II	3
Approved University Core Education Curriculum course		3-4
Term Hours:		14-16

#### Sophomore year

Fall semester		Hours
ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business I	3
ECON 210	Principles of Microeconomics	3
UNIV 200	Inquiry and the Craft of Argument	3
Business General Education elective		3
Term Hours:		15

#### Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 202	Foundations of Business II	3
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
Open elective		0-3
Term Hours:		15-18

#### Junior year

Fall semester		Hours
FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
SCMA 302	Business Statistics II	3

SCMA 323 or FIRE 325 or FIRE 459	Legal Environment of Business or Real Estate Law or Insurance Law	3
SCMA 325	Organizational Communication	3
Term Hours:		15

#### Spring semester

FIRE 312	Financial Modeling	3
FIRE 316	International Financial Management	3
FIRE 317	Investments	3
INFO 360	Business Information Systems	3
MGMT 319 or SCMA 329	Leadership or Introduction to Intercultural Communication	3
Term Hours:		15

#### Senior year

Fall semester		Hours
FIRE 321	Intermediate Financial Management	3
FIRE 441	Funds Management in Financial Institutions	3
FIRE 451	Options, Futures and Swaps	3
Approved finance elective		3
Open elective		2-3
Term Hours:		14-15

#### Spring semester

FIRE 417	Security Analysis and Portfolio Management	3
FIRE 461	Cases in Financial Management	3
MGMT 434	Strategic Management (capstone)	3
Approved finance elective		3
Open elective		3
Term Hours:		15
Total Hours:		117-125

## Total minimum requirement 120 credits Business, Bachelor of Science (B.S.) with a concentration in risk management and insurance/corporate

The concentration in risk management and insurance prepares students for careers in the insurance industry on all levels including (but not limited to) underwriting, claims adjusting, employee benefits, risk modeling and analysis, risk management in all sectors of the economy, financial planning, and graduate-level study of risk management.

## Learning goals

The goal of the risk management and insurance concentration is provide students with skills in financial management, risk management and financial planning. Graduates will be able to analyze and communicate findings on complex financial issues.

## Learning outcomes

Upon completing this program:

- Students will be able to identify risks, measure them and find mitigating solutions using all financial hedging instruments and insurance. The students will use relevant data to measure risks and solutions including design risk/awards and forecasting, loss reserves, frequency and severity. The students will be using appropriate quantitative measures for making informed risk management decisions as well as financial plans.
- The students will learn how to interpret data and apply the analysis and design they create to various situations.
- Students will be able to express the analytic, quantitative and ethical dimensions of risks and risk management of firms. Written and verbal communication are stressed in the RMI classes continually and match the analytical and syntheses capabilities. The students learn to create outlines and position the projects with articulation and clarity in mind. This is present throughout all the RMI classes. Students will be able to identify and analyze ethical dimensions of every element in the RMI education. The students will understand and articulate their fiduciary responsibility in each topic and each scenario.
- Students will develop a global perspective in their courses and especially in the final class (FIRE 479). The global RMI and enterprise risk management are stressed on all levels ? the firms themselves, the products, the instruments, the coverages, the regulation and the challenges, especially in the era of systemic risk and financial stability on global levels for multinational firms.
- Students in the RMI/corporate concentration will develop in-depth knowledge and skills in the commercial aspects of corporate RMI while personal RMI is still covered. The learning outcomes will be emphasized in the area of enterprise RMI, property and casualty insurance, catastrophe coverage and models. Students will learn about life cycle RMI, life and health insurance and annuities, social insurance, pensions, and employee benefits.

## Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program		54
ACCT 203	Introduction to Accounting I	6
& ACCT 204	and Introduction to Accounting II	
BUSN 201	Foundations of Business I	6
& BUSN 202	and Foundations of Business II	
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
SCMA 212	Differential Calculus and Optimization for Business	3
or MATH 200	Calculus with Analytic Geometry	
UNIV 111	Focused Inquiry I	3

UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 165 requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree.

PSYC 214 and INTL 493 may not be counted toward a business degree.

Students must receive a minimum grade of C in FIRE 309, FIRE 449, and FIRE 479 and must have a minimum GPA of 2.0 in the remainder of the finance concentration requirements.

## Degree requirements for Business, Bachelor of Science (B.S.) with a concentration in risk management and insurance/corporate

### Business foundation

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212	Differential Calculus and Optimization for Business	
or MATH 200	Calculus with Analytic Geometry	
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1

Business General Education elective (Select credits from the approved list.)	3
Total Hours	16

**Additional Business Foundation requirements**

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
SCMA 302	Business Statistics II	3
Open electives		8-11
Total Hours		23-26

**Advanced business program****Advanced business core**

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

**Major requirements****Advanced core (flexible by major)**

FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
FIRE 459	Insurance Law	3
INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
or SCMA 329	Introduction to Intercultural Communication	

**Major-specific courses**

FIRE 307	System Safety	3
or FIRE 444	Occupational Safety, Health and Security	
FIRE 309	Risk and Insurance	3
or FIRE 419	Advanced Risk and Insurance	
FIRE 429	Property and Liability Insurance	3
FIRE 439	Life and Health Insurance	3
FIRE 449	Employee Benefit Planning	3
FIRE 469	Advanced Property/Casualty Insurance: Alternative Markets	3
FIRE 479	Managing Financial Risk	3

Approved RMI/corporate concentration elective	3
Total Hours	57

**Total minimum requirement 120 credits****Business general education electives**

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society
UNIV 222	Pseudoscience
UNIV 299	What's the Big Idea?

**Approved risk management and insurance/corporate electives**

BUSN 400 & BUSN 401	Principles of Consulting and International Consulting Practicum (must get credit for both courses to count toward degree completion)	6
ECON 307	Money and Banking	3
ECON 402	Business Cycles and Forecasting	3
FIRE 305	Principles of Real Estate	3
FIRE 329	E-business Risk Management	3
FIRE 359	Issues in Risk Management and Insurance	3
FIRE/MGMT 444	Occupational Safety, Health and Security	3
FIRE 451	Options, Futures and Swaps	3
FIRE 491	Topics in Finance, Insurance and Real Estate	1-3
FIRE 493	Internship in Finance, Insurance and Real Estate (requires departmental approval)	3
MGMT 331	Human Resource Management	3
MKTG 315	Buyer Behavior	3
MKTG 335	Introduction to Personal Selling	3
MKTG 442	Services Marketing	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Freshman year**

Fall semester		Hours
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
SCMA 171	Mathematical Applications for Business	3
UNIV 111	Focused Inquiry I	3
Approved University Core Education Curriculum courses		6-8
Term Hours:		14-16

**Spring semester**

BUSN 225	Winning Presentations	3
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
MATH 200 or SCMA 212	Calculus with Analytic Geometry or Differential Calculus and Optimization for Business	3-4
UNIV 112	Focused Inquiry II	3

Approved University Core Education Curriculum course	3-4
Term Hours:	14-16

**Sophomore year****Fall semester**

ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business I	3
ECON 210	Principles of Microeconomics	3
UNIV 200	Inquiry and the Craft of Argument	3
Business General Education elective		3
Term Hours:		15

**Spring semester**

ACCT 204	Introduction to Accounting II	3
BUSN 202	Foundations of Business II	3
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
Open elective		0-3
Term Hours:		15-18

**Junior year****Fall semester**

FIRE 311	Financial Management	3
FIRE 459	Insurance Law	3
MGMT 310	Managing People in Organizations	3
SCMA 302	Business Statistics II	3
SCMA 325	Organizational Communication	3
Term Hours:		15

**Spring semester**

FIRE 309 or FIRE 419	Risk and Insurance or Advanced Risk and Insurance	3
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
FIRE 439	Life and Health Insurance	3
MGMT 319 or SCMA 329	Leadership or Introduction to Intercultural Communication	3
Term Hours:		15

**Senior year****Fall semester**

FIRE 307 or FIRE 444	System Safety or Occupational Safety, Health and Security	3
FIRE 429	Property and Liability Insurance	3
FIRE 449	Employee Benefit Planning	3
INFO 360	Business Information Systems	3
Open elective		3
Term Hours:		15

**Spring semester**

FIRE 469	Advanced Property/Casualty Insurance: Alternative Markets	3
FIRE 479	Managing Financial Risk	3
MGMT 434	Strategic Management (capstone)	3
Approved RMI/corporate concentration elective		3

Open elective	3
Term Hours:	15
Total Hours:	118-125

**Total minimum requirement 120 credits****Business, Bachelor of Science (B.S.) with a concentration in risk management and insurance/financial planning**

The concentration in risk management and insurance prepares students for careers in the insurance industry on all levels including (but not limited to) underwriting, claims adjusting, employee benefits, risk modeling and analysis, risk management in all sectors of the economy, financial planning, and graduate-level study of risk management.

**Learning goals**

The goal of the risk management and insurance concentration is provide students with skills in financial management, risk management and financial planning. Graduates will be able to analyze and communicate findings on complex financial issues.

**Learning outcomes****Upon completing this program:**

- Students will be able to identify risks, measure them and find mitigating solutions using all financial hedging instruments and insurance. The students will use relevant data to measure risks and solutions including design risk/awards and forecasting, loss reserves, frequency and severity. The students will be using appropriate quantitative measures for making informed risk management decisions as well as financial plans.
- The students will learn how to interpret data and apply the analysis and design they create to various situations.
- Students will be able to express the analytic, quantitative and ethical dimensions of risks and risk management of firms. Written and verbal communication are stressed in the RMI classes continually and match the analytical and syntheses capabilities. The students learn to create outlines and position the projects with articulation and clarity in mind. This is present throughout all the RMI classes. Students will be able to identify and analyze ethical dimensions of every element in the RMI education. The students will understand and articulate their fiduciary responsibility in each topic and each scenario.
- Students will develop a global perspective in their courses and especially in the final class (FIRE 479). The global RMI and enterprise risk management are stressed on all levels - the firms themselves, the products, the instruments, the coverages, the regulation and the challenges, especially in the era of systemic risk and financial stability on global levels for multinational firms.
- Students in the RMI/financial planning concentration will develop in-depth knowledge and skills in the personal aspects of RMI while covering corporate RMI in less depth. The skills and emphasis will be in the area of financial planning solutions for life cycle risks with added knowledge in financial investing decisions for retirement, taxation and estate planning. The students learn to use financial models for personal RMI solutions.

## Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program	54
ACCT 203 & ACCT 204	6
Introduction to Accounting I and Introduction to Accounting II	
BUSN 201 & BUSN 202	6
Foundations of Business I and Foundations of Business II	
BUSN 225	3
Winning Presentations	
ECON 210	3
Principles of Microeconomics	
ECON 211	3
Principles of Macroeconomics	
INFO 160	1
Digital Literacy: Computer Concepts, Internet, Digital Devices	
INFO 161	1
Digital Literacy: Word Processing Skills I	
INFO 162	1
Digital Literacy: Spreadsheets Skills I	
INFO 165	1
Digital Literacy: Spreadsheet Skills II	
SCMA 212	3
Differential Calculus and Optimization for Business	
or MATH 200	
Calculus with Analytic Geometry	
UNIV 111	3
Focused Inquiry I	
UNIV 112	3
Focused Inquiry II (with a minimum grade of C)	
UNIV 200	3
Inquiry and the Craft of Argument (with a minimum grade of C)	

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 165 requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree.

PSYC 214 and INTL 493 may not be counted toward a business degree.

Students must receive a minimum grade of C in FIRE 309, FIRE 449, and FIRE 479 and must have a minimum GPA of 2.0 in the remainder of the finance concentration requirements.

## Degree requirements for Business, Bachelor of Science (B.S.) with a concentration in risk management and insurance/financial planning

### Business foundation

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212	Differential Calculus and Optimization for Business	
or MATH 200	Calculus with Analytic Geometry	
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
Business General Education elective (Select credits from the approved list.)		3
Total Hours		16

#### Additional Business Foundation requirements

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
SCMA 302	Business Statistics II	3
Open electives		8-11
Total Hours		23-26

## Advanced business program

#### Advanced business core

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

#### Major requirements

Advanced core (flexible by major)

FIRE 312	Financial Modeling	3
FIRE 317	Investments	3



FIRE 459	Insurance Law	3
INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
or SCMA 329	Introduction to Intercultural Communication	
Major-specific courses		
ACCT 405	Tax Accounting Principles	3
FIRE 309	Risk and Insurance	3
or FIRE 419	Advanced Risk and Insurance	
FIRE 417	Security Analysis and Portfolio Management	3
FIRE 439	Life and Health Insurance	3
FIRE 449	Employee Benefit Planning	3
FIRE 479	Managing Financial Risk	3
Approved RMI/financial planning concentration electives		6
Total Hours		57

## Total minimum requirement 120 credits

### Business general education electives

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society
UNIV 222	Pseudoscience
UNIV 299	What's the Big Idea?

### Approved risk management and insurance/financial planning electives

ACCT 303	Intermediate Accounting I	3
ACCT 410	Advanced Tax Accounting	3
BUSN 400	Principles of Consulting	6
& BUSN 401	and International Consulting Practicum (must get credit for both courses to count toward degree completion)	
ECON 402	Business Cycles and Forecasting	3
FIRE 316	International Financial Management	3
FIRE 329	E-business Risk Management	3
FIRE 359	Issues in Risk Management and Insurance	3
FIRE 429	Property and Liability Insurance	3
FIRE 451	Options, Futures and Swaps	3
FIRE 469	Advanced Property/Casualty Insurance: Alternative Markets	3
FIRE 491	Topics in Finance, Insurance and Real Estate	1-3

FIRE 492	Independent Study in Finance, Insurance and Real Estate	1-3
FIRE 493	Internship in Finance, Insurance and Real Estate	3
MKTG 315	Buyer Behavior	3
MKTG 335	Introduction to Personal Selling	3
MKTG 442	Services Marketing	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
SCMA 171	Mathematical Applications for Business	3
UNIV 111	Focused Inquiry I	3
Approved University Core Education Curriculum courses		6-8
Term Hours:		14-16

### Spring semester

BUSN 225	Winning Presentations	3
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
MATH 200	Calculus with Analytic Geometry	3-4
or SCMA 212	or Differential Calculus and Optimization for Business	
UNIV 112	Focused Inquiry II	3
Approved University Core Education Curriculum course		3-4
Term Hours:		14-16

### Sophomore year

Fall semester		
ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business I	3
ECON 210	Principles of Microeconomics	3
UNIV 200	Inquiry and the Craft of Argument	3
Business General Education elective		3
Term Hours:		15

### Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 202	Foundations of Business II	3
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
Open elective		0-3
Term Hours:		15-18

### Junior year

Fall semester		
FIRE 311	Financial Management	3
FIRE 459	Insurance Law	3
MGMT 310	Managing People in Organizations	3
SCMA 302	Business Statistics II	3

SCMA 325	Organizational Communication	3
Term Hours:		15
<b>Spring semester</b>		
FIRE 309 or FIRE 419	Risk and Insurance or Advanced Risk and Insurance	3
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
INFO 360	Business Information Systems	3
MGMT 319 or SCMA 329	Leadership or Introduction to Intercultural Communication	3
Term Hours:		15
<b>Senior year</b>		
<b>Fall semester</b>		
FIRE 417	Security Analysis and Portfolio Management	3
FIRE 439	Life and Health Insurance	3
FIRE 449	Employee Benefit Planning	3
Approved RMI/financial planning elective		3
Open elective		3
Term Hours:		15
<b>Spring semester</b>		
ACCT 405	Tax Accounting Principles	3
FIRE 479	Managing Financial Risk	3
MGMT 434	Strategic Management	3
Approved RMI/financial planning elective		3
Open elective		3
Term Hours:		15
Total Hours:		118-125

## Total minimum requirement 120 credits

# Financial Technology, Bachelor of Science (B.S.) with a concentration in actuarial science

The Bachelor of Science in Financial Technology offers concentrations in actuarial science and financial engineering. The program provides quantitatively oriented students the opportunity to apply mathematical, statistical and programming tools to the financial, risk management and actuarial disciplines. Designed to meet the growing need for quantitative modeling and analysis in finance, risk management and actuarial science, the program is technical and interdisciplinary in nature. The curriculum emphasizes courses in finance, statistics and mathematics with supporting courses in related areas.

The actuarial science concentration provides excellent preparation for the basic professional examinations and continued study in actuarial science. Students who complete this concentration also may find employment in areas such as quantitative applications in corporate and public financial policy, actuarial modeling and forecasting, reserves computation and rate making, and computer and information systems in the financial services and risk management industries.

## Learning goals

- To support career advancement over time by giving our students the academic foundation in information systems needed for continued professional development.
- To help students develop the professional skills that will be needed by the businesses and organizations that hire our graduates.
- To help our students develop ethical awareness so that they are able to deal with an ethical dilemma in the workplace

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Graduates will be able to understand the role of information systems and information technology in the organization, especially as a source of information.
- Graduates will be able to understand the value of, and be able to use, financial/accounting data to make decisions at both strategic and operating levels within the context of their discipline-specific knowledge.
- Graduates will be able to communicate effectively both orally and in writing.
- Graduates will be able to understand the importance to themselves, their organization and the larger community of working effectively in teams.
- Graduates will be able to use the appropriate quantitative/statistical analysis and reasoning to make business decisions.
- Graduates will be able to demonstrate an ability to respond appropriately to ethical dilemmas in business. From a scenario (i.e., what is good for some consumers might not be good for society as a whole), the student will be required to identify both sides of the dilemma, state what action they would recommend and incorporate the marketing concept and the American Marketing Association Code of Ethics in developing their recommendation.
- This program is to provide cutting-edge quantitative skills with mathematical, statistical and programming tools.
- Graduates will be able to explain and use terminology identified with risk management, demonstrate competence in the use of risk modeling and prepare corporate risk management plans.
- Graduates will be able to apply mathematical, statistical and programming tools to finance, risk management and actuarial disciplines.
- In recognition of the growing demand for communication of complex financial information, graduates will be able to clearly articulate financial analysis information in writing and in presentations.
- Graduates will be able to estimate Value at Risk-VaR (financial/operational) for a business situation and recommend optimal hedging strategies.

## Special requirements

To complete a degree, a minimum of 123 credits is required with no more than four of those credits in physical education and no more than another four credits from INFO 160, INFO 161, INFO 162, INFO 163, INFO 164, INFO 165, INFO 166, INFO 167, INFO 168 and INFO 169. All students entering junior-level business and economics courses are expected to have competency in computer-based word processing and spreadsheet

skills. Students are required to complete the INFO 160 course in the Freshman year either through testing out or completing the course.

Students admitted into this program must place into MATH 200 to continue in the program. Students in the financial technology program must attain a minimum grade of C in UNIV 112, UNIV 200 all MATH/STAT and 300/400 level courses. A student receiving a grade below C may repeat the course one time to raise the grade to the required level. In addition, a minimum GPA of 2.5 must be maintained. Students who fall below a GPA of 2.5 will be placed on program probation and will be given one semester to return to the minimum GPA of 2.5. Students who do not return to the required GPA will be advised out of the program. A student must have a minimum GPA of 2.5 to graduate from the program. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Many courses are offered irregularly, please work with an adviser for optimal course sequencing.

## Degree requirements for Financial Technology, Bachelor of Science (B.S.) with a concentration in actuarial science

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		4
Approved social/behavioral sciences		3-4
Total Hours		22-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	6
& ECON 211	and Principles of Macroeconomics	
MATH 200	Calculus with Analytic Geometry (satisfies quantitative literacy)	-
MATH 201	Calculus with Analytic Geometry	4
MATH 211	Mathematical Structures	3
MATH 307	Multivariate Calculus	4
MATH 310	Linear Algebra	3
Total Hours		23

### Major courses

ACCT 203	Introduction to Accounting I	3
ACCT 204	Introduction to Accounting II	3
ACCT 303	Intermediate Accounting I	3
ACCT 304	Intermediate Accounting II	3
FIRE 309	Risk and Insurance	3
or FIRE 419	Advanced Risk and Insurance	
FIRE 311	Financial Management	3
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3

FIRE 321	Intermediate Financial Management	3
FIRE 417	Security Analysis and Portfolio Management	3
FIRE 451	Options, Futures and Swaps	3
FIRE 459	Insurance Law	3
FIRE 479	Managing Financial Risk	3
INFO 202	Introduction to E-business Technologies	3
INFO 350	Intermediate Programming	3
INFO 361	Systems Analysis and Design	3
INFO 364	Database Systems	3
INFO 450	Advanced Programming	3
MATH/STAT 309		3
MATH/OPER 327		3
STAT 212	Concepts of Statistics	3
STAT 321	Introduction to Statistical Computing	3
STAT 513	Mathematical Statistics I	3
STAT 514	Mathematical Statistics II	3
SCMA 325	Organizational Communication	3
Approved actuarial science elective (choose one)		3
FIRE 359	Issues in Risk Management and Insurance	
FIRE 429	Property and Liability Insurance	
FIRE 439	Life and Health Insurance	
FIRE 449	Employee Benefit Planning	
FIRE 493	Internship in Finance, Insurance and Real Estate	
SCMA 303	Introduction to Analytics	
Total Hours		78

### Total minimum requirement 123 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
ECON 210	Principles of Microeconomics	3
MATH 200	Calculus with Analytic Geometry	4
UNIV 111	Focused Inquiry I	3
Approved University Core humanities/fine arts		3
Approved University Core natural/physical sciences		3
Term Hours:		16

#### Spring semester

BUSN 225	Winning Presentations	3
ECON 211	Principles of Macroeconomics	3
MATH 201	Calculus with Analytic Geometry	4
MATH 211	Mathematical Structures	3
UNIV 112	Focused Inquiry II	3
Term Hours:		16

#### Sophomore year

Fall semester		
ACCT 203	Introduction to Accounting I	3
INFO 202	Introduction to E-business Technologies	3

MATH 307	Multivariate Calculus	4
STAT 212	Concepts of Statistics	3
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		16

**Spring semester**

ACCT 204	Introduction to Accounting II	3
FIRE 311	Financial Management	3
INFO 350	Intermediate Programming	3
MATH 310	Linear Algebra	3
Approved University Core social/behavioral sciences		3
Term Hours:		15

**Junior year****Fall semester**

ACCT 303	Intermediate Accounting I	3
FIRE 309 or FIRE 419	Risk and Insurance or Advanced Risk and Insurance	3
INFO 361	Systems Analysis and Design	3
MATH 309 or STAT 309		3
SCMA 325	Organizational Communication	3
Term Hours:		15

**Spring semester**

ACCT 304	Intermediate Accounting II	3
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
INFO 364	Database Systems	3
MATH 327 or OPER 327		3
Term Hours:		15

**Senior year****Fall semester**

FIRE 321	Intermediate Financial Management	3
FIRE 451	Options, Futures and Swaps	3
FIRE 459	Insurance Law	3
STAT 321	Introduction to Statistical Computing	3
STAT 513	Mathematical Statistics I	3
Term Hours:		15

**Spring semester**

FIRE 417	Security Analysis and Portfolio Management	3
FIRE 479	Managing Financial Risk	3
INFO 450	Advanced Programming	3
STAT 514	Mathematical Statistics II	3
Approved actuarial science elective		3
Term Hours:		15
Total Hours:		123

## Financial Technology, Bachelor of Science (B.S.) with a concentration in financial engineering

The Bachelor of Science in Financial Technology offers tracks in actuarial science and financial engineering. The program provides quantitatively oriented students the opportunity to apply mathematical, statistical and programming tools to the financial, risk management and actuarial disciplines. Designed to meet the growing need for quantitative modeling and analysis in finance, risk management and actuarial science, the program is technical and interdisciplinary in nature. The curriculum emphasizes courses in finance, statistics and mathematics with supporting courses in related areas.

The financial engineering track offers opportunities in areas such as derivative instruments, securities, hedging, financial risk assessment/management, quantitative trading and arbitrage, and asset/liability management. Students who complete the financial engineering track may choose to continue their education by enrolling in master's programs in financial engineering and mathematical finance, or by entering directly into doctoral-level study in finance and related areas.

### Learning goals

- To support career advancement over time by giving our students the academic foundation in information systems needed for continued professional development.
- To help students develop the professional skills that will be needed by the businesses and organizations that hire our graduates.
- To help our students develop ethical awareness so that they are able to deal with an ethical dilemma in the workplace.

### Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Graduates will be able to understand the role of information systems and information technology in the organization, especially as a source of information.
- Graduates will be able to understand the value of, and be able to use, financial/accounting data to make decisions at both strategic and operating levels within the context of their discipline-specific knowledge.
- Graduates will be able to communicate effectively both orally and in writing.
- Graduates will be able to understand the importance to themselves, their organization and the larger community of working effectively in teams.
- Graduates will be able to use the appropriate quantitative/statistical analysis and reasoning to make business decisions.
- Graduates will be able to demonstrate an ability to respond appropriately to ethical dilemmas in business. From a scenario (i.e., what is good for some consumers might not be good for society as a whole), the student will be required to identify both sides of the dilemma, state what action they would recommend and incorporate the marketing concept and the American Marketing Association Code of Ethics in developing their recommendation.

- This program is to provide cutting-edge quantitative skills with mathematical, statistical and programming tools.
- Graduates will be able to explain and use terminology identified with risk management, demonstrate competence in the use of risk modeling and prepare corporate risk management plans.
- Graduates will be able to apply mathematical, statistical and programming tools to finance, risk management and actuarial disciplines.
- In recognition of the growing demand for communication of complex financial information, graduates will be able to clearly articulate financial analysis information in writing and in presentations.
- Graduates will be able to estimate Value at Risk-VaR (financial/operational) for a business situation and recommend optimal hedging strategies.

## Special requirements

To complete a degree, a minimum of 123 credits is required with no more than four of those credits in physical education and no more than another four credits from INFO 160, INFO 161, INFO 162, INFO 163, INFO 164, INFO 165, INFO 166, INFO 167, INFO 168 and INFO 169. All students entering junior-level business and economics courses are expected to have competency in computer-based word processing and spreadsheet skills. Students are required to complete the INFO 160 course in the freshman year either through testing out or completing the course.

Students admitted into this program must place into MATH 200 to continue in the program. Students in the financial technology program must attain a minimum grade of C in UNIV 112, UNIV 200 all MATH/STAT and 300/400 level courses. A student receiving a grade below C may repeat the course one time to raise the grade to the required level. In addition, a minimum GPA of 2.5 must be maintained. Students who fall below a GPA of 2.5 will be placed on program probation and will be given one semester to return to the minimum GPA of 2.5. Students who do not return to the required GPA will be advised out of the program. A student must have a minimum GPA of 2.5 to graduate from the program. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Many courses are offered irregularly, please work with an adviser for optimal course sequencing.

## Degree requirements for Financial Technology, Bachelor of Science (B.S.) with a concentration in financial engineering

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		4
Approved social/behavioral sciences		3-4
Total Hours		22-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210 & ECON 211	Principles of Microeconomics and Principles of Macroeconomics	6
MATH 200	Calculus with Analytic Geometry (satisfies quantitative literacy)	-
MATH 201	Calculus with Analytic Geometry	4
MATH 211	Mathematical Structures	3
MATH 307	Multivariate Calculus	4
MATH 310	Linear Algebra	3
Approved General Education elective		3
Any additional Tier II University Core Education Curriculum approved course		
Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, URSP or WRLD course		
Any foreign language course		
Any honors-designated course taught outside of the School of Business		
Total Hours		26

### Major courses

ACCT 203	Introduction to Accounting I	3
ACCT 204	Introduction to Accounting II	3
ECON 403	Introduction to Mathematical Economics	3
ECON 501	Introduction to Econometrics	3
FIRE 309	Risk and Insurance	3
or FIRE 419	Advanced Risk and Insurance	
FIRE 311	Financial Management	3
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
FIRE 321	Intermediate Financial Management	3
FIRE 417	Security Analysis and Portfolio Management	3
FIRE 441	Funds Management in Financial Institutions	3
FIRE 451	Options, Futures and Swaps	3
FIRE 479	Managing Financial Risk	3
INFO 202	Introduction to E-business Technologies	3
INFO 350	Intermediate Programming	3
INFO 361	Systems Analysis and Design	3
INFO 364	Database Systems	3
INFO 450	Advanced Programming	3
MATH/STAT 309		3
MATH 327		3
SCMA 325	Organizational Communication	3
STAT 212	Concepts of Statistics	3
or SCMA 301	Business Statistics I	
STAT 321	Introduction to Statistical Computing	3
STAT 403	Introduction to Stochastic Processes	3
Approved financial engineering elective		3



ACCT 303	Intermediate Accounting I	
ACCT 306	Cost Accounting	
ACCT 307	Accounting Systems	
FIRE 316/INTL 416	International Financial Management	
FIRE 491	Topics in Finance, Insurance and Real Estate	
FIRE 492	Independent Study in Finance, Insurance and Real Estate	
FIRE 493	Internship in Finance, Insurance and Real Estate (requires departmental approval)	
INFO 300	Information Technology Infrastructure	
SCMA 303	Introduction to Analytics	
SCMA 323	Legal Environment of Business	
Total Hours		75

## Total minimum requirement 123 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
ECON 210	Principles of Microeconomics	3
MATH 200	Calculus with Analytic Geometry (satisfies University Core quantitative literacy)	4
UNIV 111	Focused Inquiry I	3
Approved University Core humanities/fine arts		3
Approved University Core natural/physical sciences		3
Term Hours:		16

### Spring semester

BUSN 225	Winning Presentations	3
ECON 211	Principles of Macroeconomics	3
MATH 201	Calculus with Analytic Geometry	4
MATH 211	Mathematical Structures	3
UNIV 112	Focused Inquiry II	3
Term Hours:		16

### Sophomore year

Fall semester		
ACCT 203	Introduction to Accounting I	3
INFO 202	Introduction to E-business Technologies	3
MATH 307	Multivariate Calculus	4
STAT 212	Concepts of Statistics	3
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		16

### Spring semester

ACCT 204	Introduction to Accounting II	3
FIRE 311	Financial Management	3
INFO 350	Intermediate Programming	3
MATH 310	Linear Algebra	3
Approved University Core social/behavioral sciences		3
Term Hours:		15

### Junior year

### Fall semester

FIRE 309	Risk and Insurance	3
or FIRE 419	or Advanced Risk and Insurance	
INFO 450	Advanced Programming	3
MATH 309		3
or STAT 309		
SCMA 325	Organizational Communication	3
Approved General Education elective		3
Term Hours:		15

### Spring semester

ECON 403	Introduction to Mathematical Economics	3
ECON 501	Introduction to Econometrics	3
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
INFO 364	Database Systems	3
Term Hours:		15

### Senior year

#### Fall semester

FIRE 441	Funds Management in Financial Institutions	3
FIRE 451	Options, Futures and Swaps	3
INFO 361	Systems Analysis and Design	3
MATH 327		3
or OPER 327		
STAT 321	Introduction to Statistical Computing	3
Term Hours:		15

#### Spring semester

FIRE 321	Intermediate Financial Management	3
FIRE 417	Security Analysis and Portfolio Management	3
FIRE 479	Managing Financial Risk	3
STAT 403	Introduction to Stochastic Processes	3
Approved financial engineering elective		3
Term Hours:		15
Total Hours:		123

## Real Estate, Bachelor of Science (B.S.)

The major in real estate prepares students for the graduate-level study of real estate, economics and finance, as well as careers in land development, brokerage, valuation and investment counseling, site analysis and selection, real property management, mortgage lending, and bank trust and corporate real estate departments, in addition to other real estate-related careers in the public and private sectors.

## Learning goals

- To support career advancement over time by giving our students the academic foundation in information systems needed for continued professional development.
- To help students develop the professional skills that will be needed by the businesses and organizations that hire our graduates.

- To help our students develop ethical awareness so that they are able to deal with an ethical dilemma in the workplace.
- To ensure that students understand and can apply appropriate analytical methodologies and technology to the discipline of real estate.
- To prepare students for professional licensing, certification and/or professional designations

## Learning outcomes

### Upon completing this program:

- Graduates will be able to understand the legal foundations of real estate including contracts, options, title transfer, easements, conveyances, liens and recording statutes.
- Graduates will be able to apply mathematical techniques to real estate financial analysis, including the financing process, mortgage risk analysis and loan underwriting.
- Graduates will be able to apply the highest and best use analysis (cost, market and income approaches) in valuing real estate property and will be able to understand/calculate the mathematics of yield capitalization.
- Graduates will apply time value of money concepts to real estate applications involving real estate investment analysis including debt and equity structure.

## Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program		54
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
SCMA 212	Differential Calculus and Optimization for Business	3
or MATH 200	Calculus with Analytic Geometry	
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business

program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 165 requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree.

PSYC 214 and INTL 493 may not be counted toward a business degree.

## Degree requirements for Real Estate, Bachelor of Science (B.S.)

### Business foundation

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212	Differential Calculus and Optimization for Business	
or MATH 200	Calculus with Analytic Geometry	
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
Business General Education elective (Select credits from the approved list.)		3
Total Hours		16

#### Additional Business Foundation requirements

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
Open electives		11-14
Total Hours		23-26

## Advanced business program

### Advanced business core

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

### Major requirements

Advanced core (flexible by major)

FIRE 312	Financial Modeling	3
FIRE 325	Real Estate Law	3
INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
SCMA 323	Legal Environment of Business	3

### Major-specific courses

FIRE 305	Principles of Real Estate	3
FIRE 425	Real Estate Appraisal	3
FIRE 435	Real Estate Finance and Capital Markets	3
FIRE 445	Real Estate Investment Analysis	3

Real estate electives	12
-----------------------	----

Total Hours	57
-------------	----

## Total minimum requirement 120 credits

### Business general education electives

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society
UNIV 222	Pseudoscience
UNIV 299	What's the Big Idea?

### Approved real estate electives

ECON 307	Money and Banking	3
FIRE 309	Risk and Insurance	3
FIRE 315	Real Property Management	3
FIRE 317	Investments	3
FIRE 321	Intermediate Financial Management	3
FIRE 429	Property and Liability Insurance	3
FIRE 441	Funds Management in Financial Institutions	3
FIRE 451	Options, Futures and Swaps	3

FIRE 492	Independent Study in Finance, Insurance and Real Estate	1-3
----------	---	-----

FIRE 493	Internship in Finance, Insurance and Real Estate	3
----------	--	---

MGMT 491	Topics in Management	1-3
----------	----------------------	-----

MKTG 325	Business-to-business Marketing	3
----------	--------------------------------	---

MKTG 430	Experiential Marketing	3
----------	------------------------	---

MKTG 435	Selling in the Business Marketplace	3
----------	-------------------------------------	---

MKTG 442	Services Marketing	3
----------	--------------------	---

MKTG 445	Nonprofit Marketing	3
----------	---------------------	---

MKTG 448	Digital Marketing	3
----------	-------------------	---

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

#### Fall semester

INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
----------	--	---

INFO 162	Digital Literacy: Spreadsheets Skills I	1
----------	---	---

SCMA 171	Mathematical Applications for Business	3
----------	--	---

UNIV 111	Focused Inquiry I	3
----------	-------------------	---

Approved University Core Education Curriculum courses	6-8
---	-----

Term Hours:	14-16
-------------	-------

#### Spring semester

BUSN 225	Winning Presentations	3
----------	-----------------------	---

INFO 161	Digital Literacy: Word Processing Skills I	1
----------	--	---

INFO 165	Digital Literacy: Spreadsheet Skills II	1
----------	---	---

SCMA 212 or MATH 200	Differential Calculus and Optimization for Business or Calculus with Analytic Geometry	3-4
----------------------	--	-----

UNIV 112	Focused Inquiry II	3
----------	--------------------	---

Approved University Core Education Curriculum course	3-4
--	-----

Term Hours:	14-16
-------------	-------

### Sophomore year

#### Fall semester

ACCT 203	Introduction to Accounting I	3
----------	------------------------------	---

BUSN 201	Foundations of Business I	3
----------	---------------------------	---

ECON 210	Principles of Microeconomics	3
----------	------------------------------	---

UNIV 200	Inquiry and the Craft of Argument	3
----------	-----------------------------------	---

Business General Education elective	3
-------------------------------------	---

Term Hours:	15
-------------	----

#### Spring semester

ACCT 204	Introduction to Accounting II	3
----------	-------------------------------	---

BUSN 202	Foundations of Business II	3
----------	----------------------------	---

ECON 211	Principles of Macroeconomics	3
----------	------------------------------	---

FIRE 305	Principles of Real Estate	3
----------	---------------------------	---

SCMA 301	Business Statistics I	3
----------	-----------------------	---

Open elective	0-2
---------------	-----

Term Hours:	15-17
-------------	-------

### Junior year

#### Fall semester

MGMT 310	Managing People in Organizations	3
----------	----------------------------------	---

MKTG 301	Marketing Principles	3
SCMA 302	Business Statistics II	3
SCMA 325	Organizational Communication	3
Approved real estate elective		3
Term Hours:		15
<b>Spring semester</b>		
FIRE 311	Financial Management	3
FIRE 325	Real Estate Law	3
INFO 360	Business Information Systems	3
MGMT 319 or MKTG 335	Leadership or Introduction to Personal Selling	3
Elective		3
Term Hours:		15
<b>Senior year</b>		
<b>Fall semester</b>		
FIRE 312	Financial Modeling	3
FIRE 425	Real Estate Appraisal	3
FIRE 435	Real Estate Finance and Capital Markets	3
Approved real estate elective		3
Elective		3
Term Hours:		15
<b>Spring semester</b>		
FIRE 445	Real Estate Investment Analysis	3
MGMT 434	Strategic Management	3
Approved real estate elective		6
Elective		3
Term Hours:		15
Total Hours:		118-124

## Total minimum requirement 120 credits

### Department of Information Systems

**Lemuria Carter, Ph.D.**

Associate professor and chair

[business.vcu.edu/departments-and-centers/information-systems](http://business.vcu.edu/departments-and-centers/information-systems) (<http://business.vcu.edu/departments-and-centers/information-systems>)

The Department of Information Systems provides an innovative, high quality curriculum that is recognized nationally and internationally and maintains the ability to rapidly respond to the dynamic, changing needs of the academic discipline, industry and community.

The department offers degree programs at both the undergraduate and graduate level, as well as continuing education programs that support alumni and the community. Additionally, courses in information systems are offered to meet the needs of students in other curricula offered by the university as well as those who are seeking to enhance their knowledge of information systems.

Our faculty offers expertise in information technology and has wide-ranging research and teaching interests. As part of the department, the Information Systems Research Institute provides opportunities for sponsored research, innovative teaching initiatives and faculty development.

• Information Systems, Bachelor of Science (B.S.) (p. 386)

• Information Systems, Certificate in (Post-baccalaureate undergraduate certificate) (p. 389)

## Information Systems, Bachelor of Science (B.S.)

The mission of the Bachelor of Science in Information Systems is to equip students for successful careers as information systems professionals by offering a curriculum that combines technical computing skills with relevant business knowledge.

Generally, students take 12 courses (36 hours) in information systems. Five of these courses are required; four more must be taken from the School of Business's flexible core in information systems (viz. INFO 323, INFO 361, INFO 320 and INFO 461), and students then choose three upper-level courses from the list of approved electives.

INFO 202 is a prerequisite for many upper-level information systems courses. Exceptions to prerequisite courses require recommendation of the faculty adviser and permission of the department chair.

Students who wish to concentrate their electives within a track to gain enhanced proficiency may do so. The recommended tracks are:

### Application development

INFO 450	Advanced Programming	3
INFO 451	Advanced Technology for E-business	3

### Business analysis

INFO 463	Business Process Engineering	3
INFO 468	Information Engineering	3

### Information and communications technology

INFO 472	Infrastructure Services	3
INFO 474	Advanced Networking and Security	3

## Learning goals (program objectives)

The major in information systems provides a curriculum that:

- Prepares students to begin professional careers upon graduation by providing experience with the most current technologies needed to support the delivery and management of information systems
- Supports career advancement over time by giving our graduates the academic foundation in information systems needed for continued professional development
- Supports the needs of the business community

Learning outcomes (student outcomes)

**Upon completing this program, students will know and know how to do the following:**

- Apply knowledge of computing and mathematics appropriate to the discipline
- Analyze a problem, and identify and define the computing requirements appropriate to its solution
- Design, implement and evaluate a computer-based system, process, component or program to meet desired needs
- Function effectively on teams to accomplish a common goal
- Understand professional, ethical, legal, security and social issues and responsibilities

- Communicate effectively with a range of audiences
- Analyze the local and global impact of computing on individuals, organizations and society
- Recognize the need for and be able to engage in continuing professional development
- Use current techniques, skills and tools necessary for computing practice
- Understand the processes that support the delivery and management of information systems within a specific application environment

## Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program		54
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
SCMA 212	Differential Calculus and Optimization for Business	3
or MATH 200	Calculus with Analytic Geometry	
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 165 requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Undergraduate Studies Office. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree.

PSYC 214 and INTL 493 may not be counted toward a business degree.

## Degree requirements for Information Systems, Bachelor of Science (B.S.)

### Business foundation

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212	Differential Calculus and Optimization for Business	
or MATH 200	Calculus with Analytic Geometry	
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
Business General Education elective (Select credits from the approved list.)		3
Total Hours		16

#### Additional Business Foundation requirements

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
MATH 211	Mathematical Structures	3
Open electives		8-11
Total Hours		23-26

## Advanced business program

#### Advanced business core

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

#### Major requirements

##### Advanced core (flexible by major)

INFO 320	Business Intelligence and Data Mining	3
----------	---------------------------------------	---



INFO 323	Ethical, Social and Legal Issues in Information Systems	3
INFO 361	Systems Analysis and Design	3
INFO 461	Information Systems Planning and Project Management	3
SCMA 302	Business Statistics II	3
Major-specific courses		
INFO 300	Information Technology Infrastructure	3
INFO 350	Intermediate Programming	3
INFO 364	Database Systems	3
INFO 370	Fundamentals of Data Communications	3
INFO 465	Projects in Information Systems	3
Approved INFO electives		9
Total Hours		57

## Total minimum requirement 120 credits

### Business general education electives

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society
UNIV 222	Pseudoscience
UNIV 299	What's the Big Idea?

### Information systems electives

BUSN 400 & BUSN 401	Principles of Consulting and International Consulting Practicum (if this option is chosen, both must be taken)	6
INFO 450	Advanced Programming	3
INFO 451	Advanced Technology for E-business	3
INFO 463	Business Process Engineering	3
INFO 468	Information Engineering	3
INFO 472	Infrastructure Services	3
INFO 474	Advanced Networking and Security	3
INFO 491	Topics in Information Systems	1-3
INFO 492	Independent Study in Information Systems (requires departmental approval)	1-3
INFO 493	Internship in Information Systems	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

## Freshman year

Fall semester		Hours
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
SCMA 171	Mathematical Applications for Business	3
UNIV 111	Focused Inquiry I	3
University Core Education Curriculum approved courses		6-8
Term Hours:		14-16

## Spring semester

BUSN 225	Winning Presentations	3
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business or Calculus with Analytic Geometry	3
UNIV 112	Focused Inquiry II	3
University Core Education Curriculum approved course		3-4
Term Hours:		14-15

## Sophomore year

Fall semester		Hours
ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business I	3
ECON 210	Principles of Microeconomics	3
INFO 202	Introduction to E-business Technologies (or other elective)	3
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		15

## Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 202	Foundations of Business II	3
ECON 211	Principles of Macroeconomics	3
INFO 323	Ethical, Social and Legal Issues in Information Systems	3
MATH 211	Mathematical Structures	3
Elective		0-2
Term Hours:		15-17

## Junior year

Fall semester		Hours
INFO 361	Systems Analysis and Design	3
MGMT 310	Managing People in Organizations	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3
Term Hours:		15

## Spring semester

INFO 300	Information Technology Infrastructure	3
INFO 364	Database Systems	3
INFO 461	Information Systems Planning and Project Management	3
SCMA 302	Business Statistics II	3
Business General Education elective		3
Term Hours:		15

**Senior year****Fall semester**

FIRE 311	Financial Management	3
INFO 320	Business Intelligence and Data Mining	3
INFO 350	Intermediate Programming	3
INFO 370	Fundamentals of Data Communications	3
Approved information systems elective		3
Term Hours:		15

**Spring semester**

INFO 465	Projects in Information Systems	3
MGMT 434	Strategic Management	3
Approved information systems electives		6
Elective		3
Term Hours:		15
Total Hours:		118-123

**Total minimum requirement 120 credits****Information Systems, Certificate in (Post-baccalaureate undergraduate certificate)**

The Certificate in Information Systems is designed for students who hold bachelor's degrees in fields other than information systems and who wish to continue their education in information systems but are not pursuing a graduate degree at this time. Candidates for the certificate are required to complete a total of 30 hours beyond the bachelor's degree, including the courses listed below or their equivalents, with a minimum of 24 credit hours of study in information systems to be taken at VCU.

The certificate is designed to provide more than a basic knowledge of information systems. Specifically, persons completing the program are expected to achieve competency in understanding information systems terminology, concepts and principles; computer program design, writing and testing; systems analysis/design through proper application and knowledge of current hardware and software; and planning and carrying out system development and the management of information systems. Students acquiring these skills are well-received in the business community and in governmental organizations.

For additional information, please visit the School of Business website at [business.vcu.edu/undergraduate-studies/prospective-certificate-students/undergraduate-certificates/post-baccalaureate-certificate-in-information-systems](http://business.vcu.edu/undergraduate-studies/prospective-certificate-students/undergraduate-certificates/post-baccalaureate-certificate-in-information-systems) (<http://business.vcu.edu/undergraduate-studies/prospective-certificate-students/undergraduate-certificates/post-baccalaureate-certificate-in-information-systems>).

**Learning outcomes**

Upon completing this program, students will know and know how to do the following:

- Apply knowledge of computing and mathematics appropriate to the discipline
- Analyze a problem, and identify and define the computing requirements appropriate to its solution
- Design, implement and evaluate a computer-based system, process, component or program to meet desired needs
- Function effectively on teams to accomplish a common goal

- Understand professional, ethical, legal, security and social issues and responsibilities
- Communicate effectively with a range of audiences
- Analyze the local and global impact of computing on individuals, organizations and society
- Recognize the need for and be able to engage in continuing professional development
- Use current techniques, skills and tools necessary for computing practice
- Understand the processes that support the delivery and management of information systems within a specific application environment

**Special requirements**

Students cannot be accepted into a program until they have completed all the requirements for their bachelor's degree and have achieved a minimum 2.5 GPA in their undergraduate work.

After acceptance in the program, certificate candidates are required to complete a minimum of 24 credit hours of their program at VCU.

**Academic regulations for School of Business post-baccalaureate undergraduate certificates**

The School of Business has specific academic regulations (p. 360) that apply to students in the undergraduate certificate program.

INFO 160 is a prerequisite for INFO 202. INFO 202 is a prerequisite for INFO 350, INFO 364 and INFO 370. MATH 211 is a prerequisite for INFO 350, INFO 364 and INFO 370. INFO 202 and MATH 211 cannot be used as electives within the information systems post-baccalaureate program. Exceptions to prerequisite courses require recommendation of the adviser and permission of the department chair.

**Degree requirements for Information Systems, Certificate in (Post-baccalaureate undergraduate certificate)**

INFO 300	Information Technology Infrastructure	3
INFO 323	Ethical, Social and Legal Issues in Information Systems	3
INFO 350	Intermediate Programming	3
INFO 361	Systems Analysis and Design	3
INFO 364	Database Systems	3
INFO 370	Fundamentals of Data Communications	3
INFO 461	Information Systems Planning and Project Management	3
INFO 465	Projects in Information Systems	3
Upper-level electives		3
Total Hours		27

**Total minimum requirement 30 credits****Sample outline**

(Most students are enrolled part time. Students planning full-time enrollment should consult with the program adviser.)

**Year one**

Fall semester		Hours
INFO 300	Information Technology Infrastructure	3

INFO 361	Systems Analysis and Design	3
Term Hours:		6
<b>Spring semester</b>		
INFO 350	Intermediate Programming	3
INFO 370	Fundamentals of Data Communications	3
Term Hours:		6
<b>Year two</b>		
<b>Fall semester</b>		
INFO 323	Ethical, Social and Legal Issues in Information Systems	3
INFO 364	Database Systems	3
Term Hours:		6
<b>Spring semester</b>		
INFO 461	Information Systems Planning and Project Management	3
Elective		3
Term Hours:		6
<b>Year three</b>		
<b>Fall semester</b>		
INFO 465	Projects in Information Systems	3
Elective		3
Term Hours:		6
Total Hours:		30

**Electives**

INFO 320	Business Intelligence and Data Mining	3
INFO 450	Advanced Programming	3
INFO 451	Advanced Technology for E-business	3
INFO 463	Business Process Engineering (spring only)	3
INFO 468	Information Engineering (fall only)	3
INFO 472	Infrastructure Services (fall only)	3
INFO 474	Advanced Networking and Security	3
INFO 491	Topics in Information Systems	3
INFO 492	Independent Study in Information Systems	3
INFO 493	Internship in Information Systems	3

The following course combinations are recommended for students who wish to concentrate the focus of their electives:

**Application development**

INFO 450	Advanced Programming	3
INFO 451	Advanced Technology for E-business	3

**Business analysis**

INFO 463	Business Process Engineering	3
INFO 468	Information Engineering	3

**Information and communications technology**

INFO 472	Infrastructure Services	3
INFO 474	Advanced Networking and Security	3

## Department of Management

S. Douglas Pugh, Ph.D.

Associate professor and chair

[business.vcu.edu/departments-and-centers/management](http://business.vcu.edu/departments-and-centers/management) (<http://business.vcu.edu/departments-and-centers/management>)

The Department of Management offers a Bachelor of Science in Business with concentrations in human resource management, management/business administration, management/entrepreneurship and management/international management. The department also offers a human resource management minor and a certificate in international management studies, as well as a doctoral degree in business with a concentration in management.

Business, Bachelor of Science (B.S.) with a concentration in:

- Human resource management (p. 390)
- Management/business administration (p. 393)
- Management/entrepreneurship (p. 395)
- Management/international management (p. 398)

- Human resource management, minor in (p. 402)
- Human Resource Management, Certificate in (Post-baccalaureate undergraduate certificate) (p. 400)
- International Management Studies, Certificate in (Undergraduate certificate) (p. 401)

## Business, Bachelor of Science (B.S.) with a concentration in human resource management

The concentration in human resource management gives students a broad overview of the knowledge base and applications used by professionals in the field. Students receive exposure to a wide range of topics reflecting the body of knowledge required for the Professional in Human Resources certification exam administered by the HR Certification Institute. After graduation, students are prepared for employment in the public or private sector as human resource management generalists or as specialists in human resource management functions such as recruiting, compensation management or benefits administration.

## Learning goals

The goal of the curriculum for the human resource management concentration is for students to understand human resource management concepts and principles needed to design and implement policies and practices that enhance an organization's ability to attract, motivate, develop and retain effective employees.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Understand the basic functions and responsibilities of human resource management
- Identify, evaluate and provide solutions to problems relevant to human resource management

## Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into

the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program		54
ACCT 203	Introduction to Accounting I	6
& ACCT 204	and Introduction to Accounting II	
BUSN 201	Foundations of Business I	6
& BUSN 202	and Foundations of Business II	
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
Another INFO 16X course		1
SCMA 212	Differential Calculus and Optimization for Business	3
or MATH 200	Calculus with Analytic Geometry	
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 165 requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree..

PSYC 214 and INTL 493 may not be counted toward a business degree.

## Degree requirements for Business, Bachelor of Science (B.S.) with a concentration in human resource management

### Business foundation

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3

Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212	Differential Calculus and Optimization for Business	
or MATH 200	Calculus with Analytic Geometry	
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
Business General Education elective (Select credits from the approved list.)		3
Total Hours		16

#### Additional Business Foundation requirements

ACCT 203	Introduction to Accounting I	6
& ACCT 204	and Introduction to Accounting II	
BUSN 201	Foundations of Business I	6
& BUSN 202	and Foundations of Business II	
SCMA 302	Business Statistics II	3
Open elective		8-11
Total Hours		23-26

## Advanced business program

#### Advanced business core

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

#### Major requirements

##### Advanced core (flexible by major)

INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
SCMA 302	Business Statistics II	3
SCMA 320	Production/Operations Management	3
SCMA 323	Legal Environment of Business	3

##### Major-specific courses

MGMT 331	Human Resource Management	3
MGMT 389	Managerial Skills Development	3
MGMT 431	Strategic Human Resource Management	3
MGMT 433	Compensation Management	3
Approved general management elective		3
Approved global elective		3

Select two approved human resources electives	6
Total Hours	57

## Total minimum requirement 120 credits

### Business general education electives

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society
UNIV 222	Pseudoscience
UNIV 299	What's the Big Idea?

### Approved general management electives

BUSN 400	Principles of Consulting	3
FIRE 309	Risk and Insurance	3
MGMT 491	Topics in Management (variable, with no more than six credits total)	1-3
SCMA 350	Introduction to Project Management	3
SCMA 439	Introduction to Quality Management and Six Sigma	3

### Approved global electives

BUSN 401	International Consulting Practicum	3
ECON/INTL 329	International Economics	3
MGMT/INTL 418	International Management	3
MGMT/INTL 446	International Human Resource Management	3
MKTG/INTL 320	International Marketing	3
SCMA 329/INTL 327	Introduction to Intercultural Communication	3

### Approved human resource electives

FIRE/MGMT 444	Occupational Safety, Health and Security	3
FIRE 449	Employee Benefit Planning	3
MGMT 403	Human Resource Development	3
MGMT 420	Labor and Employment Relations	3
MGMT 447	Human Resource Information Systems	3
MGMT 493	Internship in Management	3
PSYC 310	Industrial Psychology	3
SCMA 427	Employment Law	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

## Freshman year

Fall semester			Hours
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices		1
INFO 162	Digital Literacy: Spreadsheets Skills I		1
SCMA 171	Mathematical Applications for Business		3
UNIV 111	Focused Inquiry I		3
Approved University Core Education Curriculum courses			6-8
Term Hours:			14-16

## Spring semester

BUSN 225	Winning Presentations		3
INFO 161	Digital Literacy: Word Processing Skills I		1
INFO 165	Digital Literacy: Spreadsheet Skills II		1
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business or Calculus with Analytic Geometry		3-4
UNIV 112	Focused Inquiry II		3
Approved University Core Education Curriculum course			3-4
Term Hours:			14-16

## Sophomore year

Fall semester			
ACCT 203	Introduction to Accounting I		3
BUSN 201	Foundations of Business I		3
ECON 210	Principles of Microeconomics		3
UNIV 200	Inquiry and the Craft of Argument		3
Business General Education elective			3
Term Hours:			15

## Spring semester

ACCT 204	Introduction to Accounting II		3
BUSN 202	Foundations of Business II		3
ECON 211	Principles of Macroeconomics		3
SCMA 301	Business Statistics I		3
SCMA 323	Legal Environment of Business		3
Elective			0-3
Term Hours:			15-18

## Junior year

Fall semester			
FIRE 311	Financial Management		3
MGMT 310	Managing People in Organizations		3
MGMT 331	Human Resource Management		3
SCMA 325	Organizational Communication		3
Elective			2-3
Term Hours:			14-15

## Spring semester

INFO 360	Business Information Systems		3
MGMT 319	Leadership		3
MGMT 433	Compensation Management		3
SCMA 302	Business Statistics II		3
Approved human resources elective			3
Term Hours:			15

## Senior year

### Fall semester



MGMT 389	Managerial Skills Development	3
MGMT 431	Strategic Human Resource Management	3
MKTG 301	Marketing Principles	3
SCMA 320	Production/Operations Management	3
Elective		3
Term Hours:		15
<b>Spring semester</b>		
MGMT 434	Strategic Management	3
Approved global elective		3
Approved general management elective		3
Approved human resources elective		3
Elective		3
Term Hours:		15
Total Hours:		117-125

### Total minimum requirement 120 credits

## Business, Bachelor of Science (B.S.) with a concentration in management/business administration

The activity of management is concerned with setting an organization's strategic goals and formulating processes to achieve them. Managers carry out their administrative roles by handling such duties as preparing and administering budgets, planning and directing operations, and coordinating employees' activities.

The management/business administration concentration provides students with a broad-based study of management and other business disciplines. The course options in the curriculum give students flexibility in developing a program of study that can lead to a variety of entry-level positions in private and public organizations.

### Learning goals

The **goal** of the curriculum for the management concentration is to prepare students for careers that require general skills in business and management.

### Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

1. Prepare a written analysis of situations requiring managerial decision-making
2. Use advanced quantitative reasoning and statistical ability
3. Understand the basic functions and responsibilities of human resource management
4. Evaluate the international business environment and explain the challenges facing multinational firms
5. Work with small firms, start up a small firm and understand entrepreneurial concepts useful in organizations of any size

### Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business

upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program		54
ACCT 203	Introduction to Accounting I	6
& ACCT 204	and Introduction to Accounting II	
BUSN 201	Foundations of Business I	6
& BUSN 202	and Foundations of Business II	
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
Another INFO 16X course		1
SCMA 212	Differential Calculus and Optimization for Business	3
or MATH 200	Calculus with Analytic Geometry	
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 165 requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree..

PSYC 214 and INTL 493 may not be counted toward a business degree.

## Degree requirements for Business, Bachelor of Science (B.S.) with a concentration in management/business administration

### Business foundation

#### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4

Approved quantitative literacy:	3-4
SCMA 212 Differential Calculus and Optimization for Business	
or MATH 200 Calculus with Analytic Geometry	
Approved social/behavioral sciences	3-4
Total Hours	21-24

**Business General Education requirements**

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
Business General Education elective (Select credits from the approved list.)		3
Total Hours		16

**Additional Business Foundation requirements**

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
SCMA 302	Business Statistics II	3
Open electives		8-11
Total Hours		23-26

**Advanced business program****Advanced business core**

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

**Major requirements****Advanced core (flexible by major)**

ECON 303	Managerial Economics	3
INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
SCMA 320	Production/Operations Management	3
SCMA 323	Legal Environment of Business	3

**Major-specific courses**

MGMT 331	Human Resource Management	3
MGMT 389	Managerial Skills Development	3
SCMA 302	Business Statistics II	3

Approved financial markets elective	3
Approved global elective	3
Approved management elective	3
Approved supply chain and analytics elective	3

Approved systems and marketing elective	3
Total Hours	57

**Total minimum requirement 120 credits****Business general education electives**

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society
UNIV 222	Pseudoscience
UNIV 299	What's the Big Idea?

**Approved financial markets electives**

ECON 307	Money and Banking	3
FIRE 305	Principles of Real Estate	3
FIRE 309	Risk and Insurance	3
FIRE 317	Investments	3

**Approved global electives**

BUSN 401	International Consulting Practicum	3
ECON/INTL 329	International Economics	3
MGMT/INTL 418	International Management	3
MKTG/INTL 320	International Marketing	3
SCMA 329/INTL 327	Introduction to Intercultural Communication	3

**Approved management electives**

BUSN 400	Principles of Consulting	3
MGMT 321	Survey of Entrepreneurship	3
MGMT 420	Labor and Employment Relations	3
MGMT 431	Strategic Human Resource Management	3
MGMT 433	Compensation Management	3
MGMT 491	Topics in Management (variable, with no more than six credits total)	1-3
MGMT 493	Internship in Management	3
SCMA 427	Employment Law	3

**Approved supply chain and analytics electives**

SCMA 303	Introduction to Analytics	3
SCMA 339	Quantitative Solutions for Management	3
SCMA 350	Introduction to Project Management	3
SCMA 386	Introduction to Supply Chain Management	3

SCMA 439	Introduction to Quality Management and Six Sigma	3
----------	--	---

#### Approved systems and marketing electives

INFO 361	Systems Analysis and Design	3
INNO 460	Product Innovation: da Vinci Project	3
MKTG 315	Buyer Behavior	3
MKTG 442	Services Marketing	3
MKTG 450	Product Development and Management	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
SCMA 171	Mathematical Applications for Business (or open elective)	3
UNIV 111	Focused Inquiry I	3
Approved University Core Education Curriculum courses		6-8
Term Hours:		14-16

#### Spring semester

BUSN 225	Winning Presentations	3
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business or Calculus with Analytic Geometry	3-4
UNIV 112	Focused Inquiry II	3
Approved University Core Education Curriculum course		3-4
Term Hours:		14-16

#### Sophomore year

Fall semester		
ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business I	3
ECON 210	Principles of Microeconomics	3
UNIV 200	Inquiry and the Craft of Argument	3
Business General Education elective		3
Term Hours:		15

#### Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 202	Foundations of Business II	3
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
Term Hours:		15

#### Junior year

Fall semester		
MGMT 310	Managing People in Organizations	3
MGMT 331	Human Resource Management	3
SCMA 302	Business Statistics II	3
SCMA 323	Legal Environment of Business	3

SCMA 325	Organizational Communication	3
Term Hours:		15

#### Spring semester

FIRE 311	Financial Management	3
INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
SCMA 320	Production/Operations Management	3
Elective		3
Term Hours:		15

#### Senior year

##### Fall semester

ECON 303	Managerial Economics	3
MGMT 389	Managerial Skills Development	3
Elective		3
Global elective		3
Supply chain and analytics elective		3
Term Hours:		15

##### Spring semester

MGMT 434	Strategic Management	3
Elective		3
Financial markets elective		3
Management elective		3
Systems and marketing elective		3
Term Hours:		15
Total Hours:		118-122

### Total minimum requirement 120 credits

## Business, Bachelor of Science (B.S.) with a concentration in management/entrepreneurship

The activity of management is concerned with setting an organization's strategic goals and formulating processes to achieve them. Managers carry out their administrative roles by handling such duties as preparing and administering budgets, planning and directing operations, and coordinating employees' activities.

The management/entrepreneurship concentration empowers students to develop an entrepreneurial mindset and complementary skill set needed to provide creative solutions for new ventures and existing organizations. Students gain knowledge of entrepreneurial and design concepts useful for questioning assumptions, exploring alternatives and developing creative solutions.

### Learning goals

The **goal** of the curriculum for the management concentration is to prepare students for careers that require general skills in business and management.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Prepare a written analysis of situations requiring managerial decision-making

2. Use advanced quantitative reasoning and statistical ability
3. Understand the basic functions and responsibilities of human resource management
4. Evaluate the international business environment and explain the challenges facing multinational firms
5. Work with small firms, start up a small firm and understand entrepreneurial concepts useful in organizations of any size

## Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program		54
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
Another INFO 16X course		1
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business Calculus with Analytic Geometry	3
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 16X requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree.

PSYC 214 and INTL 493 may not be counted toward a business degree.

## Degree requirements for Business, Bachelor of Science (B.S.) with a concentration in management/entrepreneurship

### Business foundation

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business Calculus with Analytic Geometry	
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 16x (choose from remaining 16x courses)		1
Business General Education electives (Select credits from the approved list.)		3
Total Hours		16

#### Additional Business Foundation requirements

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
Electives		11-14
Total Hours		23-26

## Advanced business program

### Advanced business core

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

### Major requirements

#### Advanced core (flexible by major)

INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
SCMA 302	Business Statistics II	3

SCMA 320	Production/Operations Management	3
SCMA 323	Legal Environment of Business	3
Major-specific courses		
FIRE 313	Financial Management for Small Business	3
MGMT 321	Survey of Entrepreneurship	3
MGMT 331	Human Resource Management	3
MGMT 389	Managerial Skills Development	3
MGMT 435	New Venture Strategy and Initiation	6
& MGMT 436	and New Venture Strategy and Initiation	
Select two approved entrepreneurship electives		6
Total Hours		57

## Total minimum requirement 120 credits

### Business general education electives

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society
UNIV 222	Pseudoscience
UNIV 299	What's the Big Idea?

### Approved entrepreneurship electives

BUSN 400	Principles of Consulting	3
BUSN 401	International Consulting Practicum	3
FIRE 305	Principles of Real Estate	3
FIRE 309	Risk and Insurance	3
INNO 460	Product Innovation: da Vinci Project	3
MGMT 422	Managing the Family Firm	3
MGMT 423	Social Entrepreneurship	3
MGMT 491	Topics in Management (variable, with no more than six credits total)	1-3
MGMT 493	Internship in Management	3
MKTG 315	Buyer Behavior	3
MKTG 335	Introduction to Personal Selling	3
MKTG 442	Services Marketing	3
MKTG 450	Product Development and Management	3
SCMA 350	Introduction to Project Management	3
SCMA 386	Introduction to Supply Chain Management	3
SCMA 439	Introduction to Quality Management and Six Sigma	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
SCMA 171	Mathematical Applications for Business	3
UNIV 111	Focused Inquiry I	3
Approved University Core Education Curriculum courses		6-8
Term Hours:		14-16

### Spring semester

BUSN 225	Winning Presentations	3
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business or Calculus with Analytic Geometry	3-4
UNIV 112	Focused Inquiry II	3
Approved University Core Education Curriculum course		3-4
Term Hours:		14-16

### Sophomore year

Fall semester		
ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business I	3
ECON 210	Principles of Microeconomics	3
UNIV 200	Inquiry and the Craft of Argument	3
Business General Education elective		3
Term Hours:		15

### Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 202	Foundations of Business II	3
ECON 211	Principles of Macroeconomics	3
SCMA 301	Business Statistics I	3
SCMA 323	Legal Environment of Business	3
Elective		0-3
Term Hours:		15-18

### Junior year

Fall semester		
FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
SCMA 302	Business Statistics II	3
SCMA 325	Organizational Communication	3
Elective		3
Term Hours:		15

### Spring semester

INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
MGMT 321	Survey of Entrepreneurship	3
MGMT 331	Human Resource Management	3



SCMA 320	Production/Operations Management	3
Term Hours:		15

**Senior year****Fall semester**

FIRE 313	Financial Management for Small Business	3
MGMT 389	Managerial Skills Development	3
MGMT 435	New Venture Strategy and Initiation	3
MKTG 301	Marketing Principles	3
Elective		3
Term Hours:		15

**Spring semester**

MGMT 434	Strategic Management	3
MGMT 436	New Venture Strategy and Initiation	3
Approved entrepreneurship and small business management electives		6
Elective		3
Term Hours:		15
Total Hours:		118-125

## Total minimum requirement 120 credits

# Business, Bachelor of Science (B.S.) with a concentration in management/ international management

The activity of management is concerned with setting an organization's strategic goals and formulating processes to achieve them. Managers carry out their administrative roles by handling such duties as preparing and administering budgets, planning and directing operations, and coordinating employees' activities.

The management/international management concentration allows students to pursue an interest in the global nature of today's business world. A variety of opportunities for international study within and outside the university are available. Students in the management/international management concentration are encouraged to enrich their learning experience by pursuing a minor in international studies or foreign language, studying abroad through the Consortium International University or taking approved courses outside the School of Business.

## Learning goals

The **goal** of the curriculum for the management concentration is to prepare students for careers that require general skills in business and management.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

1. Prepare a written analysis of situations requiring managerial decision-making
2. Use advanced quantitative reasoning and statistical ability
3. Understand the basic functions and responsibilities of human resource management
4. Evaluate the international business environment and explain the challenges facing multinational firms

5. Work with small firms, start up a small firm and understand entrepreneurial concepts useful in organizations of any size

## Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program		54
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
Another INFO 16X course		1
SCMA 212	Differential Calculus and Optimization for Business	3
or MATH 200	Calculus with Analytic Geometry	
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 166 requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree..

PSYC 214 and INTL 493 may not be counted toward a business degree.

## Degree requirements for Business, Bachelor of Science (B.S.) with a concentration in management/international management

### Business foundation

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212	Differential Calculus and Optimization for Business	
or MATH 200	Calculus with Analytic Geometry	
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 166	Digital Literacy: Database Skills	1
Business General Education elective (Select credits from the approved list.)		3
Total Hours		16

#### Additional Business Foundation requirements

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
Electives		8-14
Total Hours		20-26

## Advanced business program

#### Advanced business core

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

#### Major requirements

Advanced core (flexible by major)		
INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
SCMA 302	Business Statistics II	3

SCMA 320	Production/Operations Management	3
SCMA 323	Legal Environment of Business	3
Major-specific courses		
ECON/INTL 329	International Economics	3
MGMT 331	Human Resource Management	3
MGMT 389	Managerial Skills Development	3
MGMT/INTL 418	International Management	3
MKTG/INTL 320	International Marketing	3
Select three approved international management electives		9
Total Hours		57

## Total minimum requirement 120 credits

#### Business general education electives

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society
UNIV 222	Pseudoscience
UNIV 299	What's the Big Idea?

#### Approved international management electives

BUSN 400	Principles of Consulting	3
BUSN 401	International Consulting Practicum	3
FIRE 316/INTL 416	International Financial Management	3
MGMT/INTL 446	International Human Resource Management	3
MGMT 491	Topics in Management (variable, with no more than six credits total)	1-3
MGMT 493	Internship in Management	3
MKTG 448	Digital Marketing	3
SCMA 329/INTL 327	Introduction to Intercultural Communication	3

Consortium International University courses (require approval by faculty adviser and chair)

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
SCMA 171	Mathematical Applications for Business	3

UNIV 111	Focused Inquiry I	3
Approved University Core Education Curriculum courses		6-8
Term Hours:		14-16
<b>Spring semester</b>		
BUSN 225	Winning Presentations	3
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 166	Digital Literacy: Database Skills	1
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business or Calculus with Analytic Geometry	3-4
UNIV 112	Focused Inquiry II	3
Approved University Core Education Curriculum course		3-4
Term Hours:		14-16

**Sophomore year****Fall semester**

ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business I	3
ECON 210	Principles of Microeconomics	3
UNIV 200	Inquiry and the Craft of Argument	3
Business General Education elective		3
Term Hours:		15

**Spring semester**

ACCT 204	Introduction to Accounting II	3
BUSN 202	Foundations of Business II	3
ECON 211	Principles of Macroeconomics	3
SCMA 323	Legal Environment of Business	3
Elective		3
Term Hours:		15

**Junior year****Fall semester**

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3
Term Hours:		15

**Spring semester**

ECON 329 or INTL 329	International Economics or International Economics	3
INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
MGMT 331	Human Resource Management	3
SCMA 302	Business Statistics II	3
Term Hours:		15

**Senior year****Fall semester**

MGMT 389	Managerial Skills Development	3
MGMT 418 or INTL 418	International Management or International Management	3
SCMA 320	Production/Operations Management	3
Approved international management elective		3

Elective		3
Term Hours:		15
<b>Spring semester</b>		
MGMT 434	Strategic Management	3
MKTG 320 or INTL 320	International Marketing or International Marketing	3
Approved international management electives		6
Elective		3
Term Hours:		15
Total Hours:		118-122

**Total minimum requirement 120 credits****Human Resource Management, Certificate in (Post-baccalaureate undergraduate certificate)**

**Note: Admission to this program is temporarily suspended.** For information about one of our other certificate programs, please visit the School of Business website at [business.vcu.edu/undergraduate-studies/prospective-certificate-students](http://business.vcu.edu/undergraduate-studies/prospective-certificate-students) (<http://business.vcu.edu/undergraduate-studies/prospective-certificate-students>).

The Certificate in Human Resource Management is designed to increase the knowledge and skills of human resource practitioners, to prepare individuals who are seeking employment in the field and to educate persons who desire more knowledge about human resource management.

The program is designed to provide students with an understanding of HRM concepts and principles needed to design and implement HRM policies that support an organization's strategic plan, and to develop HRM practices that enhance an organization's ability to attract, motivate, develop and retain effective employees. Persons completing the program should have enhanced opportunities for employment in the HRM field.

Students must earn a minimum of 30 semester credit hours to satisfy the certificate requirements, with a minimum of 24 semester credit hours earned at VCU.

**Learning outcomes**

**Upon completing this program, students will know and know how to do the following:**

1. Understand the basic functions and responsibilities of human resource management.
2. Identify, evaluate, and provide solutions to problems relevant to human resource management.

**Special requirements**

Students cannot be accepted into a program until they have completed all the requirements for their bachelor's degree and have achieved at least a 2.5 GPA in their undergraduate work.

After acceptance in the program, certificate candidates are required to complete a minimum of 24 credit hours of their program at VCU.

## Academic regulations for School of Business post-baccalaureate undergraduate certificates

The School of Business has specific academic regulations (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/post-baccalaureate-certificates>) that apply to students in the undergraduate certificate program.

## Degree requirements for Human Resource Management, Certificate in (Post-baccalaureate undergraduate certificate)

### Foundation courses <sup>1</sup>

MGMT 319	Leadership	3
MGMT 331	Human Resource Management	3

### Required courses

MGMT 431	Strategic Human Resource Management	3
MGMT 433	Compensation Management	3
MGMT/INTL 446	International Human Resource Management	3

### Electives <sup>2</sup>

Select five courses from list below.	15
<b>Total Hours</b>	<b>30</b>

<sup>1</sup> Students should take these courses first.

<sup>2</sup> Any prerequisites must also be satisfied. Many electives are offered only once each year. Students should consult with their program adviser regarding elective availability.

## Total minimum requirement 30 credits

### Electives

Select five of the following: <sup>2</sup> 15

FIRE/MGMT 444	Occupational Safety, Health and Security
FIRE 449	Employee Benefit Planning
MGMT 389	Managerial Skills Development
MGMT 403	Human Resource Development
MGMT 420	Labor and Employment Relations
MGMT 447	Human Resource Information Systems
MGMT 493	Internship in Management <sup>1</sup>
PSYC 310	Industrial Psychology
SCMA 427	Employment Law

<sup>1</sup> Requires departmental approval.

## Sample outline

(Most students are enrolled part time. Students planning full-time enrollment should consult with the program adviser.)

### Year one

Fall semester		Hours
MGMT 319	Leadership	3
MGMT 331	Human Resource Management	3
Term Hours:		6

### Spring semester

MGMT 446 or INTL 446	International Human Resource Management or International Human Resource Management	3
Elective		3
Term Hours:		6

### Year two

#### Fall semester

MGMT 433	Compensation Management	3
Elective		3
Term Hours:		6

#### Spring semester

Electives		6
Term Hours:		6

### Year three

#### Fall semester

MGMT 431	Strategic Human Resource Management	3
Elective		3
Term Hours:		6
Total Hours:		30

## International Management Studies, Certificate in (Undergraduate certificate)

The certificate program in international management studies is an interdisciplinary program offered by the Department of Management in the School of Business and the School of World Studies in the College of Humanities and Sciences. The certificate program combines international management, foreign languages and European studies into a unique program intended to equip students for careers in international business. Students concentrating in liberal arts or business programs, as well as other majors, are encouraged to apply.

Certification through this program requires 33 to 36 hours of approved credits from the list of courses given below. Students may enroll in this program and take courses while enrolled in another undergraduate program at the university, but must choose the same country track for European studies and foreign language courses.

For more information, contact Charles M. Byles, D.B.A., of the Department of Management at (804) 828-7125 or [cmbytes@vcu.edu](mailto:cmbytes@vcu.edu), or Patricia Cummins, Ph.D., of the School of World Studies at (804) 827-0958 or [pcummins@vcu.edu](mailto:pcummins@vcu.edu), or visit the program's website: [www.cim.bus.vcu.edu](http://www.cim.bus.vcu.edu) (<http://www.cim.bus.vcu.edu>).

## Course requirements

### European studies

Select three of the following (at least one course must be specific to one of the following country tracks: France, Germany or Spain): 9

EUCU 307	Aspects of German Culture
FREN 420	French Regional Culture
FREN 421	French Contemporary Culture
GRMN 421	The Postwar German Scene
HIST 102	Survey of European History
HIST 316	Postwar Europe, 1945 to the Present

HIST 317	History of France I	
HIST 319	History of Germany I	
HIST 329	History of Spain and Portugal	
HIST 330	History of Women in Europe I	
POLI/INTL 352	European Governments and Politics	
SPAN 420	Civilization of Spain II	
URSP/INTL 334	Regional Geography of ____	
Total Hours		9

## Foreign languages

Select one of the following language tracks:		9
French:		
FREN 300	Advanced Grammar and Writing	
FREN 321	French Civilization and Culture II	
FREN 440	Commercial French	
German		
GRMN 300	Composition and Communication	
GRMN 301	Grammar and Writing	
GRMN 314	Commercial German	
GRMN 321	From Faust to Nazism: Civilization and Literature II	
Spanish		
SPAN 300	Advanced Grammar and Writing	
SPAN 320	Civilization of Spain I	
SPAN 414	Commercial Spanish	
Total Hours		9

## International management

MGMT 310	Managing People in Organizations	3
MGMT/INTL 418	International Management	3
SCMA 329/INTL 327	Introduction to Intercultural Communication	3
Total Hours		9

## Experiential learning

Select one of the following courses on ways to apply program content to international management settings:		3
INTL 493	International Studies Internship	
MGMT/INTL 491	Topics in Management (Study Abroad)	
Or an approved service-learning course from the following:		
FREN 300	Advanced Grammar and Writing	
RELS 340/INTL 341	Global Ethics and the World's Religions	
SPAN/LING 402	Language Issues in the Spanish-speaking World	
Or other approved courses		
Total Hours		3

## Language/cultural immersion experience

Students must complete an approved language/cultural immersion experience by which they demonstrate the successful application of foreign language, cross cultural and management skills. This demonstration can be achieved through the following:

Select one of the following:		0-3
An overseas internship		
A service-learning course		
Previous life experience		
An approved study abroad program such as the following:		
MGMT/INTL 491	Topics in Management	

## Core course in international management

Students must complete the following integrative course, which should be taken toward the end of the program.

MGMT/INTL 419	Doing Business in Europe	3
---------------	--------------------------	---

## Total minimum requirement 33-36 credits

## Human resource management, minor in

The minor in human resource management consists of 18 credits and gives students exposure to some of the knowledge from this field. Core courses provide a broad foundation on which more specialized required and elective courses build.

### Core courses <sup>1</sup>

MGMT 310	Managing People in Organizations	3
MGMT 331	Human Resource Management	3

### Required courses

MGMT 431	Strategic Human Resource Management	3
MGMT 433	Compensation Management	3

### Approved electives <sup>2</sup>

Select two from the following:		6
FIRE/MGMT 444	Occupational Safety, Health and Security	
FIRE 449	Employee Benefit Planning	
MGMT 319	Leadership	
MGMT 389	Managerial Skills Development	
MGMT 403	Human Resource Development	
MGMT 420	Labor and Employment Relations	
MGMT/INTL 446	International Human Resource Management	
MGMT 447	Human Resource Information Systems	
PSYC 310	Industrial Psychology	
SCMA 427	Employment Law	

Total Hours		18
-------------	--	----

<sup>1</sup> Students should take these courses first, as they are prerequisites for several other required and elective courses.

<sup>2</sup> Any prerequisites must also be satisfied.

## Department of Marketing

Michael W. Little, Ph.D.

Associate professor and chair

[business.vcu.edu/departments-and-centers/marketing](http://business.vcu.edu/departments-and-centers/marketing) (<http://business.vcu.edu/departments-and-centers/marketing>)

The Department of Marketing provides students with a comprehensive introduction to the many topics and concepts that make up today's



marketing professions. Additionally, students have the opportunity to participate in high quality learning experiences that broaden traditional ideas of the classroom in projects, exercises and internship experiences that involve a variety of business organizations as well as state and local government agencies.

Marketing, Bachelor of Science (B.S.) with a concentration in:

- General marketing (p. 403)
- Integrated marketing communications (p. 405)
- Personal selling and business marketing (p. 408)
- Product and brand management (p. 411)

## Marketing, Bachelor of Science (B.S.) with a concentration in general marketing

The major in marketing gives students a broad working knowledge of contemporary marketing philosophy and practice. The general marketing concentration provides students an understanding of the processes of creating and communicating value for customers, clients and society at large. Judicious selection of courses will also allow students to tailor their program of study to their individual backgrounds, interests and career aspirations. The courses in the major provide a mix of educational approaches, including lecture and discussion, case problems, and in-field experience. Graduates of this program will find career opportunities in marketing management, advertising, sales, marketing research, public relations, retailing and other areas of business.

### Learning goals

The **goal** of the marketing curriculum is to provide students with a broad working knowledge of contemporary marketing philosophy and practice.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Formulate the problem or problems that organizations face
2. Apply appropriate research design, sampling and data analysis
3. Know the elements of the buyer behavior model and apply it to marketing decisions
4. Analyze a situation that reflects basic understanding of the global business environment and apply fundamental marketing concepts, tools and strategies in the international marketplace

### Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program	54
ACCT 203 & ACCT 204	6
BUSN 201 & BUSN 202	6
BUSN 225	3

ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 166	Digital Literacy: Database Skills	1
SCMA 212	Differential Calculus and Optimization for Business	3
or MATH 200	Calculus with Analytic Geometry	
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 166 requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree.

PSYC 214 and INTL 493 may not be counted toward a business degree.

## Degree requirements for Marketing, Bachelor of Science (B.S.) with a concentration in general marketing

### Business foundation

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212	Differential Calculus and Optimization for Business	
or MATH 200	Calculus with Analytic Geometry	
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 166	Digital Literacy: Database Skills	1
Business General Education elective (Select credits from the approved list.)		3
Total Hours		16

**Additional Business Foundation requirements**

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
Open electives		11-14
Total Hours		23-26

**Advanced business program****Advanced business core**

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

**Major requirements**

## Advanced core (flexible by major)

INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
MKTG 310	Information for Marketing Decisions	3
SCMA 320	Production/Operations Management	3
SCMA 323	Legal Environment of Business	3

## Major-specific courses

MKTG 302	Marketing Problems	3
MKTG 315	Buyer Behavior	3
MKTG/INTL 320	International Marketing	3
MKTG 330	Integrated Marketing Communications	3
Approved marketing electives		12

Total Hours 57

**Total minimum requirement 120 credits****Business general education electives**

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society
UNIV 222	Pseudoscience
UNIV 299	What's the Big Idea?

**Marketing electives**

MKTG 325	Business-to-business Marketing	3
MKTG 335	Introduction to Personal Selling	3
MKTG 340	Retail Management	3
MKTG 430	Experiential Marketing	3
MKTG 435	Selling in the Business Marketplace	3
MKTG 442	Services Marketing	3
MKTG 445	Nonprofit Marketing	3
MKTG 448	Digital Marketing	3
MKTG 450	Product Development and Management	3
MKTG 470	Field Project in Marketing	3
MKTG 475	Honors Seminar in Marketing	3
MKTG 491	Topics in Marketing (variable; no more than six credits)	1-3
MKTG 492	Independent Study in Marketing	1-3

Students may select up to six credits from the following (each course should be worth three credits):<sup>1</sup> 6

ACCT 306	Cost Accounting
BUSN 400	Principles of Consulting
BUSN 401	International Consulting Practicum
ECON 301	Microeconomic Theory
ECON 303	Managerial Economics
ECON 307	Money and Banking
ECON 312	E-commerce and Markets for Information Goods
FASH 341	Merchandise Planning and Control
FASH 342	Retail Buying Simulation
FIRE 305	Principles of Real Estate
FIRE 309	Risk and Insurance
FIRE 315	Real Property Management
INFO 361	Systems Analysis and Design
INFO 364	Database Systems
INNO 460	Product Innovation: da Vinci Project
MGMT 321	Survey of Entrepreneurship
MGMT 389	Managerial Skills Development
MGMT/INTL 418	International Management
MGMT/INTL 419	Doing Business in Europe
MGMT 491	Topics in Management
SCMA 302	Business Statistics II
SCMA 303	Introduction to Analytics
SCMA 329/INTL 327	Introduction to Intercultural Communication
SCMA 350	Introduction to Project Management

SCMA 386 Introduction to Supply Chain Management

<sup>1</sup> Students must complete prerequisites for these courses as specified in the course description.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester			Hours
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices		1
INFO 162	Digital Literacy: Spreadsheets Skills I		1
SCMA 171	Mathematical Applications for Business		3
UNIV 111	Focused Inquiry I		3
University Core Education Curriculum approved courses			6-8
Term Hours:			14-16

#### Spring semester

BUSN 225	Winning Presentations		3
INFO 161	Digital Literacy: Word Processing Skills I		1
INFO 166	Digital Literacy: Database Skills		1
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business or Calculus with Analytic Geometry		3-4
UNIV 112	Focused Inquiry II		3
University Core Education Curriculum approved course			3-4
Term Hours:			14-16

#### Sophomore year

Fall semester			Hours
ACCT 203	Introduction to Accounting I		3
BUSN 201	Foundations of Business I		3
ECON 210	Principles of Microeconomics		3
UNIV 200	Inquiry and the Craft of Argument		3
Open elective			2-3
Term Hours:			14-15

#### Spring semester

ACCT 204	Introduction to Accounting II		3
BUSN 202	Foundations of Business II		3
ECON 211	Principles of Macroeconomics		3
MKTG 301	Marketing Principles		3
SCMA 301	Business Statistics I		3
Term Hours:			15

#### Junior year

Fall semester			Hours
INFO 360	Business Information Systems		3
MGMT 310	Managing People in Organizations		3
MKTG 302	Marketing Problems		3
MKTG 310	Information for Marketing Decisions		3
SCMA 325	Organizational Communication		3
Open elective			0-3
Term Hours:			15-18

#### Spring semester

FIRE 311	Financial Management		3
MGMT 319	Leadership		3
MKTG 315	Buyer Behavior		3
Approved marketing elective			3
Elective			3
Term Hours:			15

#### Senior year

Fall semester			Hours
MKTG 320 or INTL 320	International Marketing or International Marketing		3
SCMA 320	Production/Operations Management		3
SCMA 323	Legal Environment of Business		3
Approved marketing elective			3
Open elective			3
Term Hours:			15

#### Spring semester

MGMT 434	Strategic Management		3
MKTG 330	Integrated Marketing Communications		3
Approved marketing electives			6
Open elective			3
Term Hours:			15
Total Hours:			117-125

## Total minimum requirement 120 credits Marketing, Bachelor of Science (B.S.) with a concentration in integrated marketing communications

The major in marketing gives students a broad working knowledge of contemporary marketing philosophy and practice. The concentration in integrated marketing communications gives students a focus on the importance of traditional media and social media marketing strategies in the marketplace. Judicious selection of courses will also allow students to tailor their program of study to their individual backgrounds, interests and career aspirations. The courses in the major provide a mix of educational approaches, including lecture and discussion, case problems, and in-field experience. Graduates of this program will find career opportunities in marketing management, advertising, sales, marketing research, public relations, retailing and other areas of business.

## Learning goals

The **goal** of the marketing curriculum is to provide students with a broad working knowledge of contemporary marketing philosophy and practice.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

1. Formulate the problem or problems that organizations face
2. Apply appropriate research design, sampling and data analysis
3. Know the elements of the buyer behavior model and apply it to marketing decisions

4. Analyze a situation that reflects basic understanding of the global business environment and apply fundamental marketing concepts, tools and strategies in the international marketplace

## Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program		54
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 166	Digital Literacy: Database Skills	1
SCMA 212	Differential Calculus and Optimization for Business	3
or MATH 200	Calculus with Analytic Geometry	
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 166 requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree.

PSYC 214 and INTL 493 may not be counted toward a business degree.

## Degree requirements for Marketing, Bachelor of Science (B.S.) with a concentration in integrated marketing communications

### Business foundation

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212	Differential Calculus and Optimization for Business	
or MATH 200	Calculus with Analytic Geometry	
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 166	Digital Literacy: Database Skills	1
Business General Education elective (Select credits from the approved list.)		3
Total Hours		16

#### Additional Business Foundation requirements

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
Open electives		11-14
Total Hours		23-26

## Advanced business program

### Advanced business core

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

#### Major requirements

##### Advanced core (flexible by major)

INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
MKTG 310	Information for Marketing Decisions	3

SCMA 320	Production/Operations Management	3
SCMA 323	Legal Environment of Business	3
Major-specific courses		
MKTG 302	Marketing Problems	3
MKTG 315	Buyer Behavior	3
MKTG/INTL 320	International Marketing	3
MKTG 330	Integrated Marketing Communications	3
Select two of the following:		6
MKTG 335	Introduction to Personal Selling	
MKTG 430	Experiential Marketing	
MKTG 448	Digital Marketing	
Approved marketing electives		6
Total Hours		57

## Total minimum requirement 120 credits

### Business general education electives

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society
UNIV 222	Pseudoscience
UNIV 299	What's the Big Idea?

### Marketing electives

MKTG 325	Business-to-business Marketing	3
MKTG 335	Introduction to Personal Selling	3
MKTG 340	Retail Management	3
MKTG 430	Experiential Marketing	3
MKTG 435	Selling in the Business Marketplace	3
MKTG 442	Services Marketing	3
MKTG 445	Nonprofit Marketing	3
MKTG 448	Digital Marketing	3
MKTG 450	Product Development and Management	3
MKTG 470	Field Project in Marketing	3
MKTG 475	Honors Seminar in Marketing	3
MKTG 491	Topics in Marketing (variable; no more than six credits)	1-3
MKTG 492	Independent Study in Marketing	1-3

Students may select up to six credits from the following (each course should be worth three credits):<sup>1</sup>

ACCT 306	Cost Accounting
BUSN 400	Principles of Consulting
BUSN 401	International Consulting Practicum

ECON 301	Microeconomic Theory
ECON 303	Managerial Economics
ECON 307	Money and Banking
ECON 312	E-commerce and Markets for Information Goods
FASH 341	Merchandise Planning and Control
FASH 342	Retail Buying Simulation
FIRE 305	Principles of Real Estate
FIRE 309	Risk and Insurance
FIRE 315	Real Property Management
INFO 361	Systems Analysis and Design
INFO 364	Database Systems
INNO 460	Product Innovation: da Vinci Project
MGMT 321	Survey of Entrepreneurship
MGMT 389	Managerial Skills Development
MGMT/INTL 418	International Management
MGMT/INTL 419	Doing Business in Europe
MGMT 491	Topics in Management
SCMA 302	Business Statistics II
SCMA 303	Introduction to Analytics
SCMA 329/INTL 327	Introduction to Intercultural Communication
SCMA 350	Introduction to Project Management
SCMA 386	Introduction to Supply Chain Management

<sup>1</sup> Students must complete prerequisites for these courses as specified in the course description.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
SCMA 171	Mathematical Applications for Business	3
UNIV 111	Focused Inquiry I	3
University Core Education Curriculum approved courses		6-8
Term Hours:		14-16

Spring semester		Hours
BUSN 225	Winning Presentations	3
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 166	Digital Literacy: Database Skills	1
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business or Calculus with Analytic Geometry	3-4
UNIV 112	Focused Inquiry II	3
University Core Education Curriculum approved course		3-4
Term Hours:		14-16

### Sophomore year

Fall semester		Hours
ACCT 203	Introduction to Accounting I	3



BUSN 201	Foundations of Business I	3
ECON 210	Principles of Microeconomics	3
UNIV 200	Inquiry and the Craft of Argument	3
Open electives		2-5

Term Hours: 14-17

#### Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 202	Foundations of Business II	3
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3

Term Hours: 15

#### Junior year

##### Fall semester

INFO 360	Business Information Systems	3
MGMT 310	Managing People in Organizations	3
MKTG 302	Marketing Problems	3
MKTG 310	Information for Marketing Decisions	3
SCMA 325	Organizational Communication	3

Term Hours: 15

##### Spring semester

FIRE 311	Financial Management	3
MGMT 319	Leadership	3
MKTG 315	Buyer Behavior	3
MKTG 335	Introduction to Personal Selling	3
or MKTG 430	or Experiential Marketing or Digital Marketing	
or MKTG 448		

Open elective 3

Term Hours: 15

#### Senior year

##### Fall semester

MKTG 320	International Marketing	3
or INTL 320	or International Marketing	
SCMA 320	Production/Operations Management	3
SCMA 323	Legal Environment of Business	3
Open elective		6

Term Hours: 15

##### Spring semester

MGMT 434	Strategic Management	3
MKTG 330	Integrated Marketing Communications	3
MKTG 335	Introduction to Personal Selling	3
or MKTG 430	or Experiential Marketing or Digital Marketing	
or MKTG 448		

Approved marketing electives 6

Term Hours: 15

Total Hours: 117-124

### Total minimum requirement 120 credits

## Marketing, Bachelor of Science (B.S.) with a concentration in personal selling and business marketing

The major in marketing gives students a broad working knowledge of contemporary marketing philosophy and practice. The concentration in personal selling and business marketing gives students a focus on personal selling strategies in the consumer and business-to-business marketplace. Judicious selection of courses will also allow students to tailor their program of study to their individual backgrounds, interests and career aspirations. The courses in the major provide a mix of educational approaches, including lecture and discussion, case problems, and in-field experience. Graduates of this program will find career opportunities in marketing management, advertising, sales, marketing research, public relations, retailing and other areas of business.

### Learning goals

The **goal** of the marketing curriculum is to provide students with a broad working knowledge of contemporary marketing philosophy and practice.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Formulate the problem or problems that organizations face
2. Apply appropriate research design, sampling and data analysis
3. Know the elements of the buyer behavior model and apply it to marketing decisions
4. Analyze a situation that reflects basic understanding of the global business environment and apply fundamental marketing concepts, tools and strategies in the international marketplace

### Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program		54
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 166	Digital Literacy: Database Skills	1
SCMA 212	Differential Calculus and Optimization for Business	3
or MATH 200	Calculus with Analytic Geometry	
UNIV 111	Focused Inquiry I	3

UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 166 requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree.

PSYC 214 and INTL 493 may not be counted toward a business degree.

## Degree requirements for Marketing, Bachelor of Science (B.S.) with a concentration in personal selling and business marketing

### Business foundation

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212	Differential Calculus and Optimization for Business	
or MATH 200	Calculus with Analytic Geometry	
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 166	Digital Literacy: Database Skills	1

Business General Education elective (Select credits from the approved list.)	3
Total Hours	16

#### Additional Business Foundation requirements

ACCT 203	Introduction to Accounting I	6
& ACCT 204	and Introduction to Accounting II	
BUSN 201	Foundations of Business I	6
& BUSN 202	and Foundations of Business II	
Open electives		11-14
Total Hours		23-26

## Advanced business program

#### Advanced business core

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

#### Major requirements

Advanced core (flexible by major)

INFO 360	Business Information Systems	3
MKTG 310	Information for Marketing Decisions	3
MKTG 335	Introduction to Personal Selling	3
SCMA 320	Production/Operations Management	3
SCMA 323	Legal Environment of Business	3

#### Major-specific courses

MKTG 302	Marketing Problems	3
MKTG 315	Buyer Behavior	3
MKTG/INTL 320	International Marketing	3
Select two of the following:		6

MKTG 325	Business-to-business Marketing	
MKTG 340	Retail Management	
MKTG 435	Selling in the Business Marketplace	
SCMA 386	Introduction to Supply Chain Management	

Approved marketing electives	9
Total Hours	57

## Total minimum requirement 120 credits

#### Business general education electives

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRDL course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
----------	------------------

UNIV 213	The Truth About Lying	
UNIV 217	Finding Your Voice in Contemporary Society	
UNIV 222	Pseudoscience	
UNIV 299	What's the Big Idea?	

**Marketing electives**

MKTG 325	Business-to-business Marketing	3
MKTG 330	Integrated Marketing Communications	3
MKTG 340	Retail Management	3
MKTG 430	Experiential Marketing	3
MKTG 435	Selling in the Business Marketplace	3
MKTG 442	Services Marketing	3
MKTG 445	Nonprofit Marketing	3
MKTG 448	Digital Marketing	3
MKTG 450	Product Development and Management	3
MKTG 470	Field Project in Marketing	3
MKTG 475	Honors Seminar in Marketing	3
MKTG 491	Topics in Marketing (variable; no more than six credits)	1-3
MKTG 492	Independent Study in Marketing	1-3
Students may select up to six credits from the following (each course should be worth three credits): <sup>1</sup>		6

ACCT 306	Cost Accounting	
BUSN 400	Principles of Consulting	
BUSN 401	International Consulting Practicum	
ECON 301	Microeconomic Theory	
ECON 303	Managerial Economics	
ECON 307	Money and Banking	
ECON 312	E-commerce and Markets for Information Goods	
FASH 341	Merchandise Planning and Control	
FASH 342	Retail Buying Simulation	
FIRE 305	Principles of Real Estate	
FIRE 309	Risk and Insurance	
FIRE 315	Real Property Management	
INFO 361	Systems Analysis and Design	
INFO 364	Database Systems	
INNO 460	Product Innovation: da Vinci Project	
MGMT 321	Survey of Entrepreneurship	
MGMT 389	Managerial Skills Development	
MGMT/INTL 418	International Management	
MGMT/INTL 419	Doing Business in Europe	
MGMT 491	Topics in Management	
SCMA 302	Business Statistics II	
SCMA 303	Introduction to Analytics	
SCMA 329/INTL 327	Introduction to Intercultural Communication	
SCMA 350	Introduction to Project Management	
SCMA 386	Introduction to Supply Chain Management	

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Freshman year**

Fall semester		Hours
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
SCMA 171	Mathematical Applications for Business	3
UNIV 111	Focused Inquiry I	3
University Core Education Curriculum approved courses		6-8
Term Hours:		14-16

**Spring semester**

BUSN 225	Winning Presentations	3
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 166	Digital Literacy: Database Skills	1
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business or Calculus with Analytic Geometry	3-4
UNIV 112	Focused Inquiry II	3
University Core Education Curriculum approved course		3-4
Term Hours:		14-16

**Sophomore year**

Fall semester		
ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business I	3
ECON 210	Principles of Microeconomics	3
UNIV 200	Inquiry and the Craft of Argument	3
Open elective		2-3
Term Hours:		14-15

**Spring semester**

ACCT 204	Introduction to Accounting II	3
BUSN 202	Foundations of Business II	3
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
Term Hours:		15

**Junior year**

Fall semester		
INFO 360	Business Information Systems	3
MGMT 310	Managing People in Organizations	3
MKTG 302	Marketing Problems	3
MKTG 310	Information for Marketing Decisions	3
SCMA 325	Organizational Communication	3
Term Hours:		15

**Spring semester**

FIRE 311	Financial Management	3
MKTG 315	Buyer Behavior	3
MKTG 335	Introduction to Personal Selling	3
Approved marketing elective		3
Open elective		3
Term Hours:		15

<sup>1</sup> Students must complete prerequisites for these courses as specified in the course description.

**Senior year****Fall semester**

MKTG 320 or INTL 320	International Marketing or International Marketing	3
SCMA 320	Production/Operations Management	3
SCMA 323	Legal Environment of Business	3
SCMA 386 or MKTG 325 or MKTG 340 or MKTG 435	Introduction to Supply Chain Management or Business-to-business Marketing or Retail Management or Selling in the Business Marketplace	3
Open elective		3
Term Hours:		15

**Spring semester**

MGMT 434	Strategic Management	3
SCMA 386 or MKTG 325 or MKTG 340 or MKTG 435	Introduction to Supply Chain Management or Business-to-business Marketing or Retail Management or Selling in the Business Marketplace	3
Approved marketing electives		6
Open elective		3
Term Hours:		15
Total Hours:		117-122

**Total minimum requirement 120 credits****Marketing, Bachelor of Science (B.S.)  
with a concentration in product and brand  
management**

The major in marketing gives students a broad working knowledge of contemporary marketing philosophy and practice. The concentration in product and brand management gives students a focus on product and service development, as well as branding strategy. Judicious selection of courses will also allow students to tailor their program of study to their individual backgrounds, interests and career aspirations. The courses in the major provide a mix of educational approaches, including lecture and discussion, case problems, and in-field experience. Graduates of this program will find career opportunities in marketing management, advertising, sales, marketing research, public relations, retailing and other areas of business.

**Learning goals**

The **goal** of the marketing curriculum is to provide students with a broad working knowledge of contemporary marketing philosophy and practice.

**Learning outcomes**

**Upon completing this program, students will know and know how to do the following:**

1. Formulate the problem or problems that organizations face

2. Apply appropriate research design, sampling and data analysis
3. Know the elements of the buyer behavior model and apply it to marketing decisions
4. Analyze a situation that reflects basic understanding of the global business environment and apply fundamental marketing concepts, tools and strategies in the international marketplace

**Special requirements**

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program		54
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 166	Digital Literacy: Database Skills	1
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business Calculus with Analytic Geometry	3
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 166 requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree.

PSYC 214 and INTL 493 may not be counted toward a business degree.

## Degree requirements for Marketing, Bachelor of Science (B.S.) with a concentration in product and brand management

### Business foundation

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212	Differential Calculus and Optimization for Business	3-4
or MATH 200	Calculus with Analytic Geometry	
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 166	Digital Literacy: Database Skills	1
Business General Education elective (Select credits from the approved list.)		3
Total Hours		16

#### Additional Business Foundation requirements

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
Open electives		11-14
Total Hours		23-26

### Advanced business program

#### Advanced business core

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

#### Major requirements

##### Advanced core (flexible by major)

INFO 360	Business Information Systems	3
MGMT 319	Leadership	3
MKTG 310	Information for Marketing Decisions	3

SCMA 320	Production/Operations Management	3
SCMA 323	Legal Environment of Business	3
Major-specific courses		
MKTG 302	Marketing Problems	3
MKTG 315	Buyer Behavior	3
MKTG/INTL 320	International Marketing	3
MKTG 450	Product Development and Management	3
Select two of the following:		6
INNO 460	Product Innovation: da Vinci Project	3
MKTG 330	Integrated Marketing Communications	
MKTG 430	Experiential Marketing	
MKTG 442	Services Marketing	3
Approved marketing electives		6
Total Hours		57

### Total minimum requirement 120 credits

#### Business general education electives

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society
UNIV 222	Pseudoscience
UNIV 299	What's the Big Idea?

#### Marketing electives

MKTG 325	Business-to-business Marketing	3
MKTG 330	Integrated Marketing Communications	3
MKTG 335	Introduction to Personal Selling	3
MKTG 340	Retail Management	3
MKTG 430	Experiential Marketing	3
MKTG 435	Selling in the Business Marketplace	3
MKTG 442	Services Marketing	3
MKTG 445	Nonprofit Marketing	3
MKTG 448	Digital Marketing	3
MKTG 450	Product Development and Management	3
MKTG 470	Field Project in Marketing	3
MKTG 475	Honors Seminar in Marketing	3
MKTG 491	Topics in Marketing (variable; no more than six credits)	1-3
MKTG 492	Independent Study in Marketing	1-3

Students may select up to six credits from the following (each course should be worth three credits):<sup>1</sup>

ACCT 306	Cost Accounting
----------	-----------------



BUSN 400	Principles of Consulting
BUSN 401	International Consulting Practicum
ECON 301	Microeconomic Theory
ECON 303	Managerial Economics
ECON 307	Money and Banking
ECON 312	E-commerce and Markets for Information Goods
FASH 341	Merchandise Planning and Control
FASH 342	Retail Buying Simulation
FIRE 305	Principles of Real Estate
FIRE 309	Risk and Insurance
FIRE 315	Real Property Management
INFO 361	Systems Analysis and Design
INFO 364	Database Systems
INNO 460	Product Innovation: da Vinci Project
MGMT 321	Survey of Entrepreneurship
MGMT 389	Managerial Skills Development
MGMT/INTL 418	International Management
MGMT/INTL 419	Doing Business in Europe
MGMT 491	Topics in Management
SCMA 302	Business Statistics II
SCMA 303	Introduction to Analytics
SCMA 329/INTL 327	Introduction to Intercultural Communication
SCMA 350	Introduction to Project Management
SCMA 386	Introduction to Supply Chain Management

<sup>1</sup> Students must complete prerequisites for these courses as specified in the course description.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
SCMA 171	Mathematical Applications for Business	3
UNIV 111	Focused Inquiry I	3
University Core Education Curriculum approved courses		6-8
Term Hours:		14-16

#### Spring semester

BUSN 225	Winning Presentations	3
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 166	Digital Literacy: Database Skills	1
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business or Calculus with Analytic Geometry	3-4
UNIV 112	Focused Inquiry II	3
University Core Education Curriculum approved course		3-4
Term Hours:		14-16

#### Sophomore year

#### Fall semester

ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business I	3
ECON 210	Principles of Microeconomics	3
UNIV 200	Inquiry and the Craft of Argument	3
Open elective		2-3
Term Hours:		14-15

#### Spring semester

ACCT 204	Introduction to Accounting II	3
BUSN 202	Foundations of Business II	3
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
Term Hours:		15

#### Junior year

#### Fall semester

INFO 360	Business Information Systems	3
MGMT 310	Managing People in Organizations	3
MKTG 302	Marketing Problems	3
MKTG 310	Information for Marketing Decisions	3
SCMA 325	Organizational Communication	3
Term Hours:		15

#### Spring semester

FIRE 311	Financial Management	3
MGMT 319	Leadership	3
MKTG 315	Buyer Behavior	3
MKTG 450	Product Development and Management	3
Open elective		3
Term Hours:		15

#### Senior year

#### Fall semester

MKTG 320 or INTL 320	International Marketing or International Marketing	3
SCMA 320	Production/Operations Management	3
SCMA 323	Legal Environment of Business	3
INNO 460 or MKTG 330 or MKTG 430 or MKTG 442	Product Innovation: da Vinci Project or Integrated Marketing Communications or Experiential Marketing or Services Marketing	3
Open elective		3
Term Hours:		15

#### Spring semester

MGMT 434	Strategic Management	3
INNO 460 or MKTG 330 or MKTG 430 or MKTG 442	Product Innovation: da Vinci Project or Integrated Marketing Communications or Experiential Marketing or Services Marketing	3

Approved marketing electives	6
Open elective	3
Term Hours:	15
Total Hours:	117-122

### Total minimum requirement 120 credits

## Department of Supply Chain Management and Analytics

**Elliott Minor, Ph.D.**

Associate professor and chair

[business.vcu.edu/departments-and-centers/supply-chain-management-and-analytics](http://business.vcu.edu/departments-and-centers/supply-chain-management-and-analytics) (<http://business.vcu.edu/departments-and-centers/supply-chain-management-and-analytics>)

Faculty in the Department of Supply Chain Management and Analytics are passionate about providing impeccable academic instruction and research that advances knowledge related to production, product development and the information systems needed to direct these endeavors. The department's undergraduate and graduate programs prepare students to immediately take important positions related to supply chain management and business analytics. The department remains involved with the corporate community through a partnership with the Commonwealth Center for Advanced Logistics Systems.

Students interested in production, distribution, and the engineering and finances supporting large-scale operations will be prepared by VCU's programs in supply chain management and analytics to enter an exciting field with plentiful job opportunities. For additional information contact the department by emailing [scma@vcu.edu](mailto:scma@vcu.edu).

- Business, Bachelor of Science (B.S.) with a concentration in supply chain management and analytics (p. 414)

## Business, Bachelor of Science (B.S.) with a concentration in supply chain management and analytics

The concentration in supply chain management and analytics gives students the skills to manage the manufacture and movement of products in the global environment and to understand the fundamentals of decision analytics. The curriculum is comprehensive in that supply chain management and analytics involve a range of issues from inventory management to risk management, as well as the indispensable role of information and technology in coordinating modern supply chains and analyzing data for the benefit of the organization.

### Learning goals

The goal of the curriculum for the supply chain management and analytics concentration is to prepare students for careers in supply chain management, logistics, and analytics.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Demonstrate an understanding of the complexities of global supply chains
2. Describe strategies for managing supply chain uncertainty and risk

3. Demonstrate an understanding of the relevance of methodologies such as forecasting quality management and project management to effective supply chain management
4. Describe the role of technology in the effective management of supply chains
5. Describe the analytic and quantitative skills required of a decision analyst

### Special requirements

The foundation program specifies course work required during the freshman and sophomore years. Students are eligible for admission into the advanced business program with a major in the School of Business upon meeting the minimum cumulative GPA requirement and successful completion of:

A minimum of 54 credits in the foundation program		54
ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 201 & BUSN 202	Foundations of Business I and Foundations of Business II	6
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business Calculus with Analytic Geometry	3
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II (with a minimum grade of C)	3
UNIV 200	Inquiry and the Craft of Argument (with a minimum grade of C)	3

The admission requirements for the School of Business (p. 361) detail the deadlines for students to be admitted to the advanced business program with a major in the school. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students may need to take additional mathematics courses as prerequisites to SCMA 212 or MATH 200. These credits will count as electives in the foundation program. The sample curriculum outline includes SCMA 171 since many of our students will need to complete this course.

The INFO 160, INFO 161, INFO 162 and INFO 165 requirements may be waived upon successful completion of a Knowledge Equivalency Test administered by the Office of Undergraduate Studies. No more than two additional credits may be applied to the degree from the INFO 16x series.

No more than four credits in physical education courses may be applied to the degree..

PSYC 214 and INTL 493 may not be counted toward a business degree.

## Degree requirements for Business, Bachelor of Science (B.S.) with a concentration in supply chain management and analytics

### Business foundation

#### General Education requirements

##### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy:		3-4
SCMA 212	Differential Calculus and Optimization for Business	
or MATH 200	Calculus with Analytic Geometry	
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Business General Education requirements

BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics	3
ECON 211	Principles of Macroeconomics	3
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
Business General Education elective (Select credits from the approved list.)		3
Total Hours		16

#### Additional Business Foundation requirements

ACCT 203	Introduction to Accounting I	6
& ACCT 204	and Introduction to Accounting II	
BUSN 201	Foundations of Business I	6
& BUSN 202	and Foundations of Business II	
SCMA 302	Business Statistics II	3
Open electives		8-11
Total Hours		23-26

### Advanced business program

#### Advanced business core

FIRE 311	Financial Management	3
MGMT 310	Managing People in Organizations	3
MGMT 434	Strategic Management (capstone)	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
SCMA 325	Organizational Communication	3

#### Major requirements

Advanced core (flexible by major)		
INFO 360	Business Information Systems	3
MGMT 319	Leadership	3

SCMA 302	Business Statistics II	3
SCMA 320	Production/Operations Management	3
SCMA 323	Legal Environment of Business	3

#### Major-specific courses

MGMT 331	Human Resource Management	3
SCMA 350	Introduction to Project Management	3
SCMA 386	Introduction to Supply Chain Management	3

Select five approved supply chain management electives 15

Total Hours 57

### Total minimum requirement 120 credits

#### Business general education electives

Additional University Core Education Curriculum approved courses

Any AFAM, ANTH, ANTZ, ARTH, BIOL, BIOZ, CHEM, CHEZ, CRJS, DANC, ENGL, ENVS, FRSC, FRSZ, GEOG, GEOZ, HIST, INNO, INSC, INTL (except INTL 493), MASC, MATH, PHIL, PHYS, PHYZ, POLI, PSYC (except PSYC 214), RELS, SOCS, SOCY, USRP or WRLD course

Any foreign language course

Any honors-designated course taught outside of the School of Business

Any of the following UNIV courses:

UNIV 211	Food for Thought
UNIV 213	The Truth About Lying
UNIV 217	Finding Your Voice in Contemporary Society
UNIV 222	Pseudoscience
UNIV 299	What's the Big Idea?

#### Supply chain management and analytics electives

BUSN 400	Principles of Consulting	6
& BUSN 401	and International Consulting Practicum (If this option is chosen, both must be taken.)	

ECON 303	Managerial Economics	3
INFO 320	Business Intelligence and Data Mining	3
MGMT 389	Managerial Skills Development	3
MKTG 310	Information for Marketing Decisions	3
SCMA 339	Quantitative Solutions for Management	3
SCMA 439	Introduction to Quality Management and Six Sigma	3
SCMA 440	Forecasting Methods and Process	3
SCMA 493	Internship in Supply Chain Management and Analytics	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
INFO 160	Digital Literacy: Computer Concepts, Internet, Digital Devices	1
INFO 162	Digital Literacy: Spreadsheets Skills I	1

SCMA 171	Mathematical Applications for Business	3
UNIV 111	Focused Inquiry I	3
Approved University Core Education Curriculum courses		6-8
Term Hours:		14-16
<b>Spring semester</b>		
BUSN 225	Winning Presentations	3
INFO 161	Digital Literacy: Word Processing Skills I	1
INFO 165	Digital Literacy: Spreadsheet Skills II	1
SCMA 212 or MATH 200	Differential Calculus and Optimization for Business or Calculus with Analytic Geometry	3-4
UNIV 112	Focused Inquiry II	3
Approved University Core Education Curriculum course		3-4
Term Hours:		14-16

**Sophomore year****Fall semester**

ACCT 203	Introduction to Accounting I	3
BUSN 201	Foundations of Business I	3
ECON 210	Principles of Microeconomics	3
UNIV 200	Inquiry and the Craft of Argument	3
Business General Education elective		3
Term Hours:		15

**Spring semester**

ACCT 204	Introduction to Accounting II	3
BUSN 202	Foundations of Business II	3
ECON 211	Principles of Macroeconomics	3
MKTG 301	Marketing Principles	3
SCMA 301	Business Statistics I	3
Elective		0-3
Term Hours:		15-18

**Junior year****Fall semester**

MGMT 310	Managing People in Organizations	3
SCMA 302	Business Statistics II	3
SCMA 320	Production/Operations Management	3
SCMA 323	Legal Environment of Business	3
SCMA 325	Organizational Communication	3
Term Hours:		15

**Spring semester**

INFO 360	Business Information Systems	3
MGMT 319 or SCMA 329	Leadership or Introduction to Intercultural Communication	3
SCMA 386	Introduction to Supply Chain Management	3
Approved supply chain management and analytics elective		3
Elective		3
Term Hours:		15

**Senior year****Fall semester**

FIRE 311	Financial Management	3
SCMA 350	Introduction to Project Management	3

Approved supply chain management and analytics electives		6
Elective		3

Term Hours: 15

**Spring semester**

MGMT 331	Human Resource Management	3
MGMT 434	Strategic Management	3
Approved supply chain management and analytics electives		6
Elective		3

Term Hours: 15

Total Hours: 118-125

**Total minimum requirement 120 credits**

# SCHOOL OF DENTISTRY

The School of Dentistry was created in 1893 when the University College of Medicine opened with a dental department as one of its original divisions. The Medical College of Virginia inaugurated a dental education program in 1897, and in 1913 the two schools were merged to form the MCV School of Dentistry.

In 1968, by an act of the Virginia General Assembly, MCV was merged with Richmond Professional Institute to form Virginia Commonwealth University. The School of Dentistry is located on VCU's MCV Campus.

The facilities of the School of Dentistry are housed in the Wood Memorial, Lyons and Perkinson buildings and contain clinical facilities, research facilities, classrooms, student laboratories, departmental offices and a computer-learning laboratory.

The school provides opportunities for selected, qualified individuals to study dentistry under the most favorable conditions and in accordance with the standards established by the Commission on Dental Accreditation of the American Dental Association.

The degree of Doctor of Dental Surgery (D.D.S.) is awarded to graduates of the school's professional program and the Bachelor of Science degree to graduates of the Dental Hygiene Program within the Department of Oral Health Promotion and Community Outreach.

Graduates of the advanced dental education programs in endodontics, orthodontics, pediatric dentistry and periodontics are awarded the Master of Science in Dentistry degree.

## Administration

520 North 12th Street  
P.O. Box 980566  
Richmond, Virginia 23298-0566  
Phone: (804) 828-9184  
Fax: (804) 828-6072  
dentistry.vcu.edu (<http://www.dentistry.vcu.edu>)

**David C. Sarrett, D.M.D.**  
Dean

**Richard D. Archer, D.D.S.**  
Associate dean, Clinical Dental Education

**B. Ellen Byrne, D.D.S., Ph.D.**  
Senior associate dean

**Laurie C. Carter, D.D.S., Ph.D.**  
Director, Advanced Dental Education Programs

**Riki Gottlieb, D.M.D.**  
Director, Admissions

**Michael Healy, D.D.S.**  
Senior associate dean, Student Services

**Rebecca Pousson**  
Executive associate dean

**Harvey A. Schenkein, D.D.S., Ph.D.**  
Assistant dean, Research

## Accreditation

### Dental hygiene (bachelor's degree)

Commission on Dental Accreditation

### Dentistry (D.D.S.)

Commission on Dental Accreditation

### Advanced Dental Education Programs\*

Commission on Dental Accreditation

\*(includes endodontics, oral and maxillofacial surgery, orthodontics, pediatric dentistry, periodontics and Advanced Education in General Dentistry)

## Mission

The mission of the VCU School of Dentistry:

- **Education** of highly qualified dental professionals
- **Research** that advances the understanding of oral health, disease and effective treatment
- **Service** to the community
- Improved oral and general **health** of our patients and the general population

## Dental Hygiene Program

VCU School of Dentistry  
W. Baxter Perkinson, Jr. Building, Suite 3100  
1101 East Leigh Street  
P.O. Box 980566  
Richmond, Virginia 23298-0566  
Phone: (804) 828-9096  
Fax: (804) 827-0969

**Michelle McGregor, R.D.H.**  
Director, Dental Hygiene Program

**M. Anjum Shah, R.D.H.**  
Chair, Dental Hygiene Admissions Committee

The Dental Hygiene Program, established in 1969, offers courses leading to a Bachelor of Science in Dental Hygiene. The program requires two years of liberal arts study, with a minimum of 60 semester hours, followed by two years of study focusing on basic and dental sciences, dental hygiene science and theory, community health and pre-clinic and clinical experiences. The Dental Hygiene Program is accredited by the Commission on Dental Accreditation of the American Dental Association. Upon successful completion of the program, graduates are eligible for national, regional and state board licensing examinations.

## Curriculum notes

- As part of students' course of study and community education, travel to off-campus sites is expected. Students will be required to provide their own transportation to agencies used for clinical and community health rotation experiences.
- Licensing/certification: It is important for every student to understand that, while certain curricula are designed for the purpose of achieving registration or certification by an outside agency, completion of such an academic program in no way assures the



student of successful registration or certification. No employee, agent or representative of this university is authorized or empowered to provide such assurances either directly or by implication.

- Individuals who have a felony or misdemeanor conviction may not be eligible for licensure in Virginia. The Virginia Board of Dentistry makes this decision. For questions regarding this issue, call the Virginia Board of Dentistry at (804) 662-9906.
- Criminal background checks are required prior to matriculation (<http://www.dentistry.vcu.edu/programs/dentalhygiene/background>).

## Policy on blood-borne and infectious diseases

By the nature of the profession, oral health care providers are routinely exposed to blood and body fluids during the treatment of patients in a clinical environment. In accordance with Section 32.1-45.1 of the Code of Virginia, the School of Dentistry requires that if a health care provider is exposed to body fluids in a manner that may transmit blood-borne or infectious disease, both the health care provider and the patient will be tested for disease.

## Mission, philosophy and program goals

### Mission

The Dental Hygiene Program at VCU is committed to excellence in education by considering each student's individual abilities as future clinicians and by providing an environment where students can thrive and be inspired every day. The program will prepare a diverse student body to become future practitioners who deliver health care services and oral health education in an interdisciplinary, culturally sensitive manner. The program will offer exceptional educational opportunities empowering students to become competent clinicians and lifelong learners devoted to scientific inquiry and service to the local, national and global community.

### Goals

The following program goals reflect the mission of VCU, VCU School of Dentistry and the Dental Hygiene Program competencies:

#### Education

- Prepare dental hygiene graduates who possess the knowledge, skills and attributes to provide quality dental hygiene care.
- Provide students with an interdisciplinary, evidence-based curriculum, reflective of contemporary health care delivery.
- Educate a diverse population of learners in a patient-centered, student-friendly atmosphere that fosters active and self-directed learning, critical thinking and self-assessment.

#### Patient care

- Prepare dental hygiene graduates who are competent to provide patient-centered, comprehensive, evidence-based dental hygiene care in an ethical and professional manner.
- Provide a clinical education based on a model of prevention designed to promote optimal oral and systemic health.

#### Service

- Prepare dental hygiene graduates to respond to the evolving oral health care needs of a culturally diverse society by demonstrating a commitment to civic engagement.

- Provide students with opportunities for service-learning activities in the community that promote the mission of the school, university and profession.

#### Professionalism

- Provide students with the skills to advance the foundation and practice of dental hygiene through a commitment to scientific inquiry and lifelong learning.
- Prepare dental hygiene graduates to assume leadership roles in professional organizations.
- Model professional behaviors consistent with ethical and legal expectations of the dental hygiene profession.

## Admission requirements

Two years of liberal arts study with a minimum of 60 semester hours of transferable quality academic course credits are required. For more information on the following prerequisites, please visit [dentistry.vcu.edu/programs/dentalhygiene/admission](http://www.dentistry.vcu.edu/programs/dentalhygiene/admission) (<http://www.dentistry.vcu.edu/programs/dentalhygiene/admission>).

#### Prerequisite courses

English	6
General biology with laboratory	3-5
College chemistry with laboratory	3-5
Anatomy and physiology with laboratory	5-8
Microbiology with laboratory	3-5
Humanities	3
Introductory sociology	3
Introductory psychology	3
Speech	3
Statistics	3
Visual or performing arts	3

The remainder of the 60 required credits can be chosen from any of the following areas of study: science, math, computer usage, first aid and CPR, and humanities. Science electives are strongly recommended.

For a list of prerequisite courses that can be taken in the Virginia Community College System or through Richard Bland College, refer to the VCU Transfer Guide (<http://www.transferguide.vcu.edu/recommended>).

Additional prerequisites are as follows:

- **GPA** – A minimum GPA of 2.5 based on a 4.0 scale in the cumulative courses and a minimum GPA of 2.7 in the math/science and designated prerequisite courses are required.
- **English proficiency** – To successfully complete the dental hygiene curriculum, students are required to communicate clearly (in English) with faculty, students, staff and patients. To assure such competence, the Dental Hygiene Program requires any applicant whose native language is not English and who has been educated primarily outside of the United States to submit official Test of English as a Foreign Language or International English Language Testing System scores. Applicants are required to submit an official score with the application packet. The test must have been taken within the past two years. The Dental Hygiene Program does not conditionally admit applicants who have not met the requirement for proof of English proficiency. Applicants may be exempt from this requirement if:

- They have successfully completed 26 or more transferable semester credits at a two- or four-year postsecondary institution in the United States and have completed the full freshman English (non-ESL) requirement at that school with a grade of C or better  
**or**
- They have successfully completed 60 or more transferable semester credits at a two- or four-year postsecondary institution in the United States

No student will be considered for admission until proof of English proficiency is determined.

TOEFL: VCU's Dental Hygiene Program minimum TOEFL score requirements is 550 (paper), 213 (computer) or 79-80 (internet-based). For more information about TOEFL testing, go to: [www.ets.org](http://www.ets.org) (<http://www.ets.org>)

IELTS: VCU's Dental Hygiene Program minimum IELTS score requirement is 6.0.

- **Deadline** – Complete the online application through the American Dental Education Association Dental Hygiene Centralized Application Service. All application materials must be received by the ADEA DHCAS by **Feb. 1**.

Any application that does not meet the above stipulations will not be processed.

For additional information on prerequisites or the application or admissions process, please visit the program's website for prospective students at [dentistry.vcu.edu/programs/dentalhygiene](http://dentistry.vcu.edu/programs/dentalhygiene) (<http://www.dentistry.vcu.edu/programs/dentalhygiene>).

## Academic Progress Committee guidelines

The faculty of the VCU School of Dentistry has the responsibility for evaluating the student's academic progress. It is incumbent on the course directors or their designees to specify, at the time a course first convenes, the criteria to be used in student assessment and the standards by which the students will be judged.

Guidelines that govern the actions of the Academic Progress Committee and the academic activities of the students are distributed to all students at the beginning of their studies. The guidelines are available upon request from the Office of Academics in the School of Dentistry.

## Financial assistance

A brief description of financial aid based on demonstrated need is contained in the Financial aid section of this bulletin. Scholarships and loans are available from various sources. Information on financial assistance is also available upon request from the Office of Financial Affairs, School of Dentistry, Virginia Commonwealth University, P.O. Box 980566, Richmond, VA 23298-0566.

## Criminal background checks

As an applicant to the Dental Hygiene Program at Virginia Commonwealth University School of Dentistry, all accepted candidates, prior to matriculation, will be required to submit to a criminal background check (CBC). A final decision about matriculation will be made after a review of the applicant's CBC.

The rationale for performing CBCs:

- To foster patient safety and well-being.
- To bolster the continuing trust of the public in the dental hygiene profession.
- To ascertain the ability of accepted applicants and enrolled dental hygiene students to eventually become licensed as dental hygienists.
- To minimize the liability of dental schools and their affiliated clinical facilities.

The CBC will not be a component of the application, interview or selection process but will be a mandatory component of the prematriculation process. The final decision regarding matriculation of an applicant will be based on the self-reported information in the candidate's application and information in the CBC report. Factors involved in the final decision may include, but are not limited to:

- The nature, circumstances and frequency of any reported offense(s).
- Length of time since the offense(s).
- Available information that addresses efforts at rehabilitation.
- The accuracy of the information provided by the applicant.

The information obtained through a CBC will not become part of a student's academic file and will remain confidential unless the findings result in an institutional action by the School of Dentistry.

Only candidates offered class positions and alternate-list candidates will be asked to provide a CBC prior to matriculation.

Candidates will be responsible for the cost of the CBC.

## Preparatory study for dental hygiene

University Academic Advising provides programs in preparation for admission into health sciences programs. For detailed information on the pre-health major in dental hygiene (p. 38), see the UAA section of this bulletin.

- Dental Hygiene, Bachelor of Science (p. 419)

## Dental Hygiene, Bachelor of Science (B.S.)

The Bachelor of Science in Dental Hygiene requires two years of liberal arts study, with a minimum of 60 semester hours, followed by two years of study focusing on basic and dental sciences, dental hygiene science and theory, community health and pre-clinical and clinical experiences. Upon successful completion of the program, graduates are eligible for national, regional and state board licensing examinations. Classes enter once each year in the fall semester.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Demonstrate commitment to the legal and ethical practice of dental hygiene, demonstrating integrity, honesty and confidentiality with colleagues, patients and the community
- Demonstrate competence in interpersonal and communication skills and in the evaluation, synthesis and application of information and technology as resources in contemporary dental hygiene practice
- Systematically collect, accurately record and analyze data on the general, oral and psychosocial health status of a variety of patients using methods consistent with medico-ethico-legal principles

- Use critical-thinking and decision-making skills to reach conclusions about the patient's dental hygiene treatment needs based on an analysis of all available assessment data and evidence from current scientific literature
- Collaborate with the patient, guardian and/or other health care professionals to formulate an individualized comprehensive dental hygiene care plan based on assessment findings and the dental hygiene diagnosis
- Provide and implement specialized care that includes educational, preventive and therapeutic services designed to minimize risk and optimize oral health as well as assist the patient in achieving and maintaining oral health goals
- Evaluate the outcomes of dental hygiene care, which occur throughout the process of care, and modify as necessary
- Initiate and assume responsibility for health promotion and disease prevention activities for diverse populations in a variety of settings

## Special requirements

Admission requirements include two years of liberal arts study with a minimum of 60 semester hours of transferable quality academic course credits. By completing these 60 semester hours, students will complete the general education requirements of the degree. More information concerning the admission requirements for VCU students is located in the University College chapter of this Bulletin under "Preparation for the study of dental hygiene."

- **GPA** – A minimum GPA of 2.5 based on a 4.0 scale in the cumulative courses and a minimum GPA of 2.7 in math/sciences is required.
- **English proficiency** – To successfully complete the dental hygiene curriculum, students are required to communicate clearly (in English) with faculty, students, staff and patients. To assure such competence, the Dental Hygiene Program requires any applicant whose native language is not English and who has been educated primarily outside of the United States to submit official Test of English as a Foreign Language or International English Language Testing System scores. Applicants are required to submit an official score with the application packet. The test must have been taken within the past two years. The Dental Hygiene Program does not conditionally admit applicants who have not met the requirement for proof of English proficiency.

You may be exempt from this requirement if:

- You have successfully completed 26 or more transferable semester credits at a two- or four-year postsecondary institution in the U.S. and have completed the full freshman English (non-ESL) requirement at that school with a minimum grade of C.
- or**
- You have successfully completed 60 or more transferable semester credits at a two- or four-year postsecondary institution in the U.S.

No student will be considered for admission until proof of English proficiency is determined.

TOEFL: VCU's Dental Hygiene Program minimum TOEFL score requirements are 550 (paper), 213 (computer) or 80 (internet-based). For more information about TOEFL testing, go to [www.ets.org](http://www.ets.org) (<http://www.ets.org>).

IELTS: VCU's Dental Hygiene Program minimum IELTS score requirement is 6.0.

## Degree requirements for Dental Hygiene, Bachelor of Science (B.S.)

### General Education requirements (minimum 21 credits)

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4

### Admission requirements (minimum 39 credits)

English	6-9
General biology with laboratory	3-5
College chemistry with laboratory	3-5
Anatomy with laboratory	3-5
Physiology with laboratory	3-5
Microbiology with laboratory	3-5
Humanities	3
Introductory sociology	3
Introductory psychology	3
Speech	3
Statistics	3
Visual or performing arts	3

### Major requirements

ANAT 301	Head and Neck Anatomy for Dental Hygienists	3
ANAT 302	Microscopic Anatomy (Dental Hygiene)	2
DENH 301	Dental Hygiene Theory I	5
DENH 302	Dental Hygiene Theory II	2
DENH 312	Community Oral Health Promotion	2
DENH 327	Clinical Dental Hygiene I	5
DENH 342	Nutrition	3
DENH 401	Dental Hygiene Theory III	2
DENH 402	Dental Hygiene Theory IV	2
DENH 407	Research Methods and Study Designs	2
DENH 411	Introduction to Public Health	2
DENH 412	Community Dental Health	2
DENH 422	Current Issues, the Law and Ethics	2
DENH 437	Clinical Dental Hygiene II	5
DENH 447	Clinical Dental Hygiene III	5
DENH 457	Clinical Service-learning	2
GENP 302	Dental Materials	2
GENP 311	Oral Anatomy and Occlusion	3
IPEC 501	Foundations of Interprofessional Practice	1
MICR 365	Infection and Immunity (Dental Hygiene)	2
ORPT 301	Dental Radiology	1
ORPT 324	Oral Pathology	3

ORSG 431	Management of the Medically Compromised Dental Patient and Medical Emergencies in the Dental Office	2
PERI 326	Periodontics I	1
PERI 329	Periodontics II	2
PHTX 441	Pharmacology (Dental Hygiene)	5
Total Hours		68

DENH 457	Clinical Service-learning	1
DENH 447	Clinical Dental Hygiene III (capstone)	5
Term Hours:		12
Total Hours:		68

### Total minimum requirement 128 credits

### Total minimum requirement 128 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Credits required for admission to program 60 credits

##### Junior year

Fall semester		Hours
ANAT 301	Head and Neck Anatomy for Dental Hygienists	3
ANAT 302	Microscopic Anatomy (Dental Hygiene) (Dental Hygiene)	2
DENH 301	Dental Hygiene Theory I	5
GENP 311	Oral Anatomy and Occlusion	3
IPEC 501	Foundations of Interprofessional Practice	1
MICR 365	Infection and Immunity (Dental Hygiene) (Dental Hygiene)	2
ORPT 301	Dental Radiology	1
PERI 326	Periodontics I	1
Term Hours:		18

##### Spring semester

DENH 302	Dental Hygiene Theory II	2
DENH 312	Community Oral Health Promotion	2
DENH 327	Clinical Dental Hygiene I	5
DENH 342	Nutrition	3
GENP 302	Dental Materials	2
ORPT 324	Oral Pathology	3
PERI 329	Periodontics II	2
Term Hours:		19

##### Senior year

Fall semester		Hours
DENH 401	Dental Hygiene Theory III	2
DENH 407	Research Methods and Study Designs	2
DENH 411	Introduction to Public Health	2
DENH 437	Clinical Dental Hygiene II (capstone)	5
DENH 457	Clinical Service-learning	1
ORSG 431	Management of the Medically Compromised Dental Patient and Medical Emergencies in the Dental Office	2
PHTX 441	Pharmacology (Dental Hygiene)	5
Term Hours:		19

##### Spring semester

DENH 402	Dental Hygiene Theory IV	2
DENH 412	Community Dental Health	2
DENH 422	Current Issues, the Law and Ethics	2

# SCHOOL OF EDUCATION

The Virginia Commonwealth University School of Education prepares effective, highly-skilled teachers, counselors, school administrators, higher education faculty and other education professionals committed to making a difference in the lives of children and adults and their communities, particularly in high-need learning environments.

Located on the university's Monroe Park Campus, the School of Education is ranked 33rd among graduate schools of education for 2017 in U.S. News & World Report. With a strong commitment to social justice, the school embraces inclusion among students, faculty and staff, as well as in its academic programs.

The School of Education offers two doctoral programs, three master's programs and 15 certificate/endorsement programs.

The guiding theme of educator preparation programs in the School of Education is **educator as critically reflective practitioner**. Courses and experiences provide opportunities for individuals to be engaged in meaningful dialog about the nature and application of appropriate knowledge and skills to make instructional, assessment, counseling and leadership decisions that improve student learning.

The school has 66 full-time faculty and an additional 48 teaching and research faculty, many of whom are internationally renowned experts who produce and disseminate scholarship that extends knowledge, improves practice and collaboration, and supports schools and educational and human service agencies.

## Administration

1015 West Main Street  
P.O. Box 842020  
Richmond, Virginia 23284-2020  
Phone: (804) 828-3382  
Fax: (804) 828-1323  
soe.vcu.edu (<http://www.soe.vcu.edu>)

**Andrew Daire, Ph.D.**  
Professor and dean

**James McMillan, Ph.D.**  
Professor and interim associate dean for academic affairs

**Diane J. Simon, Ph.D.**  
Associate professor and senior associate dean for student affairs

**Deborah L. Speece, Ph.D.**  
Professor and associate dean for research and faculty development

## Accreditation

### Education (all degrees)

National Council for Accreditation of Teacher Education (initial licensure and advanced degrees for school personnel), the Virginia Department of Education and the Southern Association of Colleges and Schools.

### Counselor education

Accredited by the Council on Accreditation of Counseling and Related Educational Programs

This accreditation applies to both the K-12 school counseling track and the college student development and counseling track.

The school holds membership in the American and Virginia Association of Colleges of Teacher Education and in the Holmes Partnership.

## Organization

The chief administrative office for the School of Education is Oliver Hall, Room 2090. The dean is responsible for the overall operation of the school, while three associate deans (associate dean for academic affairs, senior associate dean for student affairs and associate dean for research and faculty development) assist in the school's administrative functions.

The school contains four academic departments: Counseling and Special Education, Educational Leadership, Foundations of Education, and Teaching and Learning. The school also supports eight centers and institutes:

- Center for School Community Collaboration
- Center for Sport Leadership
- Center for Teacher Leadership
- Child Development Center
- Metropolitan Educational Research Consortium
- Partnership for People with Disabilities
- Rehabilitation Research and Training Center
- The Literacy Institute

## Facilities

The School of Education is housed primarily in Oliver Hall, where classroom, laboratory and activity centers, and faculty and administrative offices can be found. Clinical laboratories are located at 3600 W. Broad St.

## Extended Teacher Preparation Program

The School of Education, in cooperation with the College of Humanities and Sciences, offers extended teacher preparation programs in early childhood and elementary education (prekindergarten through grade six) and secondary education (grade six through grade 12). The successful completion of these programs results in the simultaneous awarding of both a bachelor's and a master's degree.

## General degree requirements

The successful completion of these programs results in the simultaneous awarding of both a bachelor's and a master's degree. Prospective Master of Teaching students earn their bachelor's degree in a specific field in which they plan to teach. A student generally begins work on the professional studies component in the third or fourth year of academic study.

A student enrolled in any one of the three extended teacher preparation programs must complete a minimum of 153/154 credits. The student must maintain a cumulative GPA of 2.8 for admission to the teacher preparation program. Completion of at least 90 credits with a minimum GPA of 3.0 in the last 60 semester hours of study is required for that student to be admitted to the graduate studies portion of the extended program.

A Post-baccalaureate Graduate Certificate in Teaching is open primarily to those who have already earned a master's degree. The candidate



must complete at least 30 additional hours beyond the bachelor's level. Admittance to this program requires a minimum GPA of 3.0 in the last 60 semester hours of study.

## Clinical experiences

All initial licensure programs require clinical experiences throughout the program. During the initial stages of a program, these experiences occur as practica in varied placements in K-12 education relevant to the student's program. Each program also requires a capstone clinical experience in the form of student teaching. For student teaching, those pursuing early and elementary education are placed in two settings, one in early elementary grades (K-2) and one in upper elementary grades (3-5). Those pursuing secondary education receive a single placement in their discipline in a middle school or high school setting.

With the guidance of a clinical faculty member or cooperating teacher, the intern assumes more independence in the field setting. Satisfactory completion of the internship and the preceding training is charted through evaluations made by the university supervisor, clinical faculty or cooperating teacher, and school administrator.

## Undergraduate major

Freshman students who plan to become early and elementary education teachers are required to enroll in the Bachelor of Interdisciplinary Studies liberal studies for early and elementary education major. Transfer students should meet with a B.I.S. adviser prior to course registration. The B.I.S. degree requirements are outlined in the College of Humanities and Sciences section of this bulletin.

Prospective secondary teachers should major in the discipline they wish to teach. The disciplines in which VCU offers licensure programs are as follows: English, history/social studies, mathematics and science (various specialties). Students should consult with their education adviser to ensure that courses taken to meet major requirements also meet state licensure requirements.

## Change of major and transfer students

Students wishing to enter the Extended Teacher Preparation Program in early and elementary education or secondary education must transfer initially to the College of Humanities and Sciences. They must declare a major in the college and a specialization in the appropriate professional studies sequence in the School of Education.

For admission to teacher preparation, a minimum GPA of 2.8 is required. A minimum GPA of 3.0 in the last 60 semester hours of study is required for admission to the graduate phase of the Extended Teacher Preparation Program.

## Transcript evaluation

The College of Humanities and Sciences evaluates transcripts of students pursuing the extended program in early and elementary education or secondary education. Credits are accepted if they conform to specific program guidelines; course equivalents from accredited colleges and universities are accepted if the grade earned is a minimum of C. From the extended program, 60 semester hours of acceptable undergraduate course work are required to be admitted to a teacher preparation program. See specific criteria in the "Admission to the Extended Teacher Preparation Programs" section of this bulletin.

Credits that are accepted from two-year institutions may meet liberal arts and sciences requirements, but will not meet professional requirements

for upper-division course work. The VCU Transfer Guide for Virginia Community Colleges lists, in full, credits accepted by VCU that have been earned in the state's community colleges.

After the initial student transcript evaluation, the assigned adviser reviews the accepted transfer credits with the student, determining what additional course work at VCU will be necessary. An adviser is not required to use all the accepted transfer credits in a student's program of study. Only those credits approved for transfer can be applied toward the chosen degree.

## Faculty advisement

An academic adviser is assigned to a student by the department of that student's chosen major in the College of Humanities and Sciences. A professional studies adviser is similarly assigned by the Department of Teaching and Learning or the Department of Health and Human Performance according to the student's proposed teaching endorsement. This adviser-student relationship continues throughout the course of study at VCU. Student and adviser jointly develop the student's individual program. During the planning process, the student identifies, clarifies and explores his or her personal and professional goals.

## Educator as reflective practitioner

The guiding theme of the teacher preparation program is "educator as reflective practitioner." The underlying foundation of instruction in the teacher preparation program is to challenge the prospective teacher to develop skills in critical reflection and to value thoughtful decision making. Candidates demonstrate critical reflection by: being open to and respectful of all stakeholders; taking other perspectives into account; utilizing critical thinking in framing and solving educational problems; making informed, ethical and professional decisions; and taking ethical and professional action.

## Demographics consideration in teaching

The demographics of elementary, middle and high school students are changing. There is an increase in the number of students for whom English is not the first language, of minority students, of students who do not all learn or respond in similar ways and of students who may be identified as possessing a disability.

Future teachers are encouraged to take advantage of opportunities through formal courses and other experiences to gain greater insight and ability in addressing learners from differing cultural backgrounds and considering the needs of learners with different learning styles, participation styles, and special abilities or disabilities.

## Standards of learning

Much of the prekindergarten through grade 12 curriculum is based on the commonwealth of Virginia's current Standards of Learning. Students preparing to be teachers are advised to examine the SOLs for the grade levels and content areas they plan to teach. The School of Education website has a link to the SOLs.

In some instances the content and concepts associated with one or more SOLs may be incorporated in a course in the College of Humanities and Sciences or in the School of Education, but as the SOLs are for a kindergarten through grade 12 curriculum and not a college curriculum, one may need to study several of these on her or his own.

## Technology standards

The use of computers, graphing calculators, science probeware and other technologies is integral to successful teaching in today's schools. Individuals preparing to teach must be competent on each of the eight standards in Virginia's Technology Standards for Instructional Personnel. These standards may be reached through the School of Education website.

Students are advised to consult with the professional studies adviser regarding the program's requirements for demonstrating competence. Several of the standards may be documented as met by passing the Computer Literacy Examination offered online through KnowledgeNet. Please see the General education requirements for undergraduate study in the "College of Humanities and Sciences" section of this bulletin.

## Extended program in early and elementary or secondary education

In the extended program, a student generally begins work on the professional studies component in the third year of study. Information on specific requirements for all academic majors is available in the Department of Teaching and Learning, in the College of Humanities and Sciences' associate dean's office or through the department of the chosen major. Students may visit [soe.vcu.edu/academics\\_programs/teaching-and-learning](http://www.soe.vcu.edu/academics_programs/teaching-and-learning) ([http://www.soe.vcu.edu/academics\\_programs/teaching-and-learning](http://www.soe.vcu.edu/academics_programs/teaching-and-learning)) for information about programs in the Department of Teaching and Learning. A student in the extended program must maintain a minimum cumulative GPA of 2.8 for admission to teacher preparation and clinical experience and, prior to the fifth year, a minimum GPA of 3.0 for admission to the graduate study portion of the program.

## Admission information

Any undergraduate admitted to VCU who declares a major in the College of Humanities and Sciences is eligible to declare a specialization in special education or secondary education. Students specializing in early and elementary education must declare liberal studies for early and elementary education as their major in the Bachelor of Interdisciplinary Studies program.

Transfer students and students currently attending VCU who wish to change their majors to this program must have a minimum GPA of 2.0; however, note the much higher GPA requirement for admission to teacher preparation and then to graduate study. All students in the program, upon completion of 60 hours of undergraduate course work and prior to completion of 90 hours, must apply for admission to teacher education. To be accepted, a student must have a minimum GPA of 2.8 and must have achieved the required commonwealth of Virginia scores on Praxis core tests and must have achieved the established score for the three tests.

Students who pursue one of the extended teacher preparation programs follow a series of steps as noted in order to meet all requirements, including the 153/154 credits.

### Step 1: Admission to the university

#### Requirements

1. Scores from Scholastic Aptitude Test (SAT) or American College Test (ACT)
2. Minimum 2.0 GPA from high school or previous college

#### Procedures

1. Declare an undergraduate major in the College of Humanities and Sciences (for early and elementary or secondary education) or a major in health, physical education and exercise science with a general health and physical education concentration in the School of Education (for health and physical education).
2. Declare an education specialization in early and elementary education, secondary education or health and physical education.

### Step 2: Admission to teacher preparation

Complete before enrolling in the first practicum (upon completion of 60 credits of liberal arts and prior to completion of 90 credits).

#### Requirements

1. Minimum GPA of 2.8
2. Completion of six hours of English, three hours of mathematics, four hours of laboratory science and six hours of social science and/or history.
3. Meet Virginia scores required for the mathematics portion of Praxis and achieve a passing score on the Virginia Communication and Literacy Assessment
4. Confirmation of education specialization (Undecided majors must decide.)
5. Enroll in or have completed TEDU 101, EDUS 300, EDUS 301 or equivalent course

#### Procedures

1. Complete Admission to Teacher Preparation Application Form (obtain in Office of Student Services) and submit a current transcript
2. Complete TEDU 101, EDUS 300, EDUS 301 or equivalent course; submit required Praxis scores
3. Register for practicum placement and accompanying courses. (**Note:** Students must be admitted to the Teacher Preparation Program to be eligible for practicum placement and accompanying courses. Applications for practicum are available at the Student Services Center. In secondary education, such applications may be distributed at the initial class meeting.)
4. Register for, take and submit required Praxis core scores

### Step 3: Application to graduate studies

#### Requirements

1. Minimum GPA of 3.0
2. Acceptable scores on the Graduate Record Examination (GRE) or Miller Analogies Test (MAT). Generally students are expected to score at least a 290 composite (Verbal and Quantitative) on the GRE or 386 on the MAT.
3. Personal statement addressing reasons for seeking graduate education, including career goals; experience working with age group to be taught; reasons for entering teaching; and success in organizing, planning and implementing work with other individuals
4. Three references: it is suggested that these be instructors or advisers in the College of Humanities and Sciences and the School of Education; use Graduate Studies Reference Forms

#### Procedures

1. Obtain Graduate School Admissions packet from the Student Services Center in Room 1037, Oliver Hall
2. Return completed application packet, along with up-to-date transcripts, to the VCU Graduate School

Note: Students must be admitted to the Graduate School to be eligible to enroll in graduate-level courses. No more than six graduate credits taken prior to admission to graduate study may be accepted toward the degree.

#### Application deadlines for early and elementary or secondary education

- Oct. 1 for spring semester
- Feb. 1 for summer and fall sessions

### Step 4: Internship

All programs require a graduate-level internship (TEDU 672 and TEDU 674) during the fifth year. Applications for internship can be obtained in the Student Services Center in Room 1037, Oliver Hall. Individuals in early and elementary education are placed in a kindergarten and a grade one through six classroom in the same semester. Individuals in secondary education typically have a single placement, although perhaps with two different teachers.

#### Requirements

1. Minimum 3.0 GPA on graduate courses
2. Admission to teacher preparation and to graduate study
3. Completed application and transcripts submitted by established deadlines
4. Passing scores on applicable Praxis II specialty tests accompanying application
5. Passing scores on the Virginia Communication and Literacy Assessment.

#### Procedures

1. Obtain application form from the Student Services Center.
2. Submit copies of transcripts and required statement to a professional studies adviser for review.
3. Obtain approval signature of professional studies adviser.
4. Submit completed application to Student Services Center by Sept. 1 for the following spring semester, by Feb. 1 for the following fall semester.

### Step 5: Admission to the profession

(during the final semester of enrollment)

#### Requirements

1. Completion of all degree requirements
2. Completion of application for initial teacher licensure (obtain from Office of Student Services)

#### Procedures

1. Complete applications for undergraduate degree in humanities and sciences with academic major adviser, and graduate degree in teaching with professional studies adviser.
2. Submit application for initial teacher licensure with signature of university supervisor or professional studies adviser to the Student Services Center.

## Added or add-on endorsements

### Added or add-on endorsements Teaching English as a Second Language

The School of Education offers the Virginia Department of Education ESL preK-12 endorsement for pre-service and in-service teachers. The ESL endorsement program at VCU requires 18 credit hours of ESL course

work and six credit hours of a modern foreign language. Candidates must complete the following courses:

ENGL/LING/ANTH 390	Introduction to Linguistics	3
ENGL/LING/TEDU 552	Teaching English as a Second Language	3
TEDU 561	Reading Foundations: Sociological/Psychological Perspectives	3
TEDU 562	Reading Instruction in the Content Areas	3
TEDU/FRLG 575	Intercultural Communication	3
TEDU 681	Investigations and Trends in Teaching (ESL 3 curriculum and assessment)	3
Foreign language courses (modern languages only)		6
Total Hours		24

### Add-on endorsements in grades 6 through 12, science

Add-on endorsements in science are available in biology, chemistry, earth science and physics. Each add-on requires a first endorsement in one science and at least 18 semester hours in the add-on science that includes preparation in specified areas. The earth science added endorsement is listed below. For information about the added endorsements in biology, chemistry or physics, contact the Department of Teaching and Learning.

#### Earth science

To add an earth science endorsement to an endorsement in another science discipline, the individual must earn at least 18 semester hours in the earth sciences, including preparation in geology, oceanography, meteorology and astronomy. Courses to meet these requirements include:

ENVS 105	Physical Geology	3
ENVZ 105	Physical Geology Laboratory	1
ENVS 335	Environmental Geology	3
ENVZ 335	Environmental Geology Laboratory	1
ENVS 401	Meteorology and Climatology	3
ENVS 411	Oceanography	3
PHYS 103	Elementary Astronomy	3
Select from the following to reach 18 total credits:		
URSP 203	Physical Geography: Weather, Climate and Biogeography	
URSP 204	Physical Geography: Geomorphology and Soils	
PHYS 391	Topics in Physics	

Minimum 18 credits required for the earth science endorsement.

# SCHOOL OF ENGINEERING

Since its inception in 1996, the School of Engineering at VCU has brought innovative, real-world engineering education to Central Virginia. The school currently teaches nearly 2,000 undergraduate students and approximately 300 graduate students. Students can earn B.S., M.S. and Ph.D. degrees through the departments of Biomedical Engineering, Chemical and Life Science Engineering, Computer Science, Electrical and Computer Engineering, and Mechanical and Nuclear Engineering.

Engineering skills alone do not equal success in the 21st century. The school challenges students to think bigger and actively collaborate with community businesses and students from a wealth of backgrounds — such as graphic design, physics and health care. Cross-disciplinary focus areas include sustainability and energy engineering, micro- and nano-electronic systems, pharmaceutical engineering, mechanobiology and regenerative medicine, security and mining of big data, and device design and development.

Students also benefit from close, personal interactions with faculty and from the many opportunities available for internships, cooperative education and undergraduate research experiences. Interdisciplinary research opportunities are offered through various state-of-the-art facilities, including the school's Nanomaterials Core Characterization Facility, the Institute for Engineering and Medicine, the Wright-Virginia Microelectronics Center, the dean's undergraduate research initiative and the da Vinci Center. To learn more, visit [egr.vcu.edu](http://egr.vcu.edu) (<http://www.egr.vcu.edu>).

## Administration

601 West Main Street  
P.O. Box 843068  
Richmond, Virginia 23284-3068  
Phone: (804) 828-0190 or (804) 828-3925  
Fax (804) 828-9866 or (804) 828-4269  
[egr.vcu.edu](http://egr.vcu.edu) (<http://www.egr.vcu.edu>)

**Barbara D. Boyan, Ph.D.**  
Dean

**Lewis F. Bost**  
Executive associate dean for innovation and outreach, finance and administration

**Gregory Triplett, Ph.D.**  
Associate dean for graduate studies

**Afrodit V. Filippas, Ph.D.**  
Associate dean for undergraduate studies

**Zvi Schwartz, Ph.D., D.M.D.**  
Associate dean for strategic initiatives

**Ram B. Gupta, Ph.D.**  
Associate dean for research

## Accreditation

The Accreditation Board for Engineering and Technology (<http://www.abet.org>) is the premier organization in the U.S. that provides accreditation to engineering and computer science programs. Individual

programs (i.e., mechanical engineering) are accredited at the bachelor's level.

The Engineering Accreditation Commission of ABET (<http://www.abet.org/about-abet/governance/accreditation-commissions/engineering-accreditation-commission>) has accredited the biomedical, chemical and life science, electrical and computer, and mechanical engineering programs at the VCU School of Engineering.

The Computing Accreditation Commission of ABET (<http://www.abet.org/about-abet/governance/accreditation-commissions/computing-accreditation-commission>) has provided accreditation to the computer science program for many years.

## Degree programs

The School of Engineering offers the following degree programs:

### Bachelor of Science

Biomedical Engineering  
Chemical and Life Science Engineering  
Computer Engineering  
Computer Science  
Electrical Engineering  
Mechanical Engineering

- Mechanical Engineering with a concentration in nuclear engineering

Students also may be admitted under “undeclared engineering” for entrance to the School of Engineering. A field of study can be determined after the first semester. Students in undeclared engineering are subject to the change of major criteria listed by each department.

### Master of Science

Biomedical Engineering  
Computer Science  
Engineering

- Engineering with a concentration in chemical and life science engineering
- Engineering with a concentration in electrical and computer engineering

Mechanical and Nuclear Engineering

### Doctor of Philosophy

Biomedical Engineering  
Engineering

- Engineering with a concentration in chemical and life science engineering
- Engineering with a concentration in computer science
- Engineering with a concentration in electrical and computer engineering

Mechanical and Nuclear Engineering

## Joint degree

M.D./Ph.D. in Biomedical Engineering in participation with the School of Medicine

## Interdisciplinary and cooperative studies degree

M.S. degree through the Commonwealth Graduate Engineering Program

## Post-baccalaureate certificate

Computer Science

## Undergraduate information

### Academic policies for undergraduates

Students majoring in biomedical, chemical and life science, computer, electrical or mechanical engineering must attain a minimum grade of C in all major courses taken. If a student receives a grade below C in any major course, that course must be retaken until the student receives a minimum grade of C. Department chairs may also identify other vital courses (i.e., math, physics) within the major for which a minimum grade of C must be achieved.

### School policy of reasonable progress

Minimum major grade point average: Upon completion of 36 or more credit hours at VCU, any student whose major GPA falls below 2.0 will be placed on in-school academic probation and will have an advising hold placed on his/her account. The student must meet with the student advising office and their faculty adviser to determine the courses to be taken the next semester. From that point forward, the student must maintain a semester minimum major GPA of 2.0. Upon failing to meet that standard, the student will be dismissed from the program.

Course failures and withdrawals: A student may attempt to complete each required major course a maximum of three times. When a student does not earn a minimum grade of C on the second attempt to complete the same major course (this will include instances in which the student withdraws from a class), the student will be notified and a hold will be placed on his/her account, prohibiting him/her from registering for classes. The student must meet with the student advising office and his/her faculty adviser to determine the courses to be taken the next semester.

If a student earns any combination of three D, F or W grades in a single required major course (including a grade excluded from the GPA calculation), then the student will be immediately dismissed from the program. A student may appeal one grade within seven business days after grades are posted. This appeal will be considered by a department committee, and a decision will be rendered before the last day of add/drop of the subsequent semester. In the case of exceptional circumstances, the committee may grant the student a fourth attempt to complete the course with a minimum grade of C. If the student does not earn a minimum grade of C on the fourth attempt, he or she will be immediately dismissed from the program.

All departments in the School of Engineering follow the above general policy of reasonable progress, unless they choose to replace them with more restrictive rules. These rules would be described in the "Special requirements" section of the individual curriculum outline.

Because of the rotating nature of higher level technical electives in the computer science program and the student's planned graduation date, computer science students may not be able to take advantage of the repeat course option offered by the university. Students should be aware of this rotating schedule and plan accordingly.

In some cases, students may be required to take foundation courses as the result of placement tests in order to prepare themselves to enter the required courses in mathematics, sciences or languages. Credit received for these foundation courses does not count toward the baccalaureate degree.

### Graduation requirements

Students in the majors of biomedical, computer, electrical and mechanical engineering must complete a minimum of 130 credit hours to be eligible for the bachelor's degree.

Students in chemical and life science engineering with a concentration in chemical engineering must complete a minimum of 126 credit hours to be eligible for a bachelor's degree.

Students in chemical and life science engineering with a concentration in life science engineering must complete a minimum of 127 credit hours to be eligible for a bachelor's degree.

Students in computer science must complete a minimum of 120 credit hours to be eligible for the bachelor's degree.

Requirements for the bachelor's degrees offered by the School of Engineering (engineering disciplines and computer science) include university undergraduate requirements (refer to the Academic Regulations and General Degree Requirements (p. 49) section in this bulletin), general education requirements and program-level degree requirements.

Students seeking the bachelor's degree for any of the programs within the School of Engineering (computer science or biomedical, chemical and life science, computer, electrical, or mechanical engineering) are responsible for understanding the specific and unique requirements of the individual programs and must complete all of them to be eligible for the granting of the degree sought.

### Cooperative education program

The VCU School of Engineering cooperative education program is an optional experiential learning program in which a student works in an approved, full-time, paid industrial position. The student works two or more semesters starting during the sophomore or junior year to meet specific learning objectives while gaining practical experience relevant to their major and earning money to offset educational expenses. The employer may prefer for the student to alternate semesters of work and school or to work consecutive semesters. An approved co-op experience can substitute for a departmental internship requirement.

Students interested in co-op must first complete ENGR 395 to prepare them to find a job and succeed in a professional environment. When a student is hired into a co-op position, he or she enrolls in ENGR 398 to maintain student status during work terms. He or she also documents progress toward learning objectives and writes about the learning experience. Following the final work term, the student enrolls in ENGR 498 to document that all co-op program requirements have been satisfied. Upon completion of this course, the student's transcript will indicate that the co-op program has been completed.

Students who meet the following criteria are eligible to begin participating in co-op work terms:

- Earned at minimum 24 credit hours, with at least 12 credit hours completed at VCU



- Good academic standing
- Overall and major minimum GPAs of 2.0
- School of Engineering major
- Completed ENGR 395

Employers may require additional credits, higher GPAs or other criteria for eligibility. Also, because employers make the hiring decisions, VCU cannot guarantee that an eligible student will be hired into a co-op position.

For more information about the co-op program, visit the School of Engineering Career Services (<http://www.egr.vcu.edu/careerservices>) website.

## Double major (B.S.) in engineering and physics

This program provides biomedical, chemical and life science, electrical, computer, mechanical, and nuclear engineering majors the opportunity to earn a double major in physics, requiring an additional nine to 17 credits beyond the hours required for the primary engineering major. The requirements for the double major are the same as those in the program description for the Bachelor of Science in Physics. Within the double major, a select number of engineering courses are acceptable substitutes for required physics courses.

The lists below show the total credits and required courses necessary — beyond what can be used as requirements for that major — for students to complete a double major in physics. In addition, the courses that are used from the primary engineering major toward fulfillment of the physics major are provided.

**Biomedical engineering** (17 credits): Additional courses are MATH 307, PHYS 301, PHYS 320, PHYS 376, PHYS 380 and PHYZ 320 (one credit).

Courses used that are required for the biomedical engineering major include: EGRB 303 replaces PHYS 340; EGRB 401 and EGRB 402 replace PHYS 450 and PHYS 490; and EGRB 427 counts as an upper-level physics elective.\* PHYS 207 and PHYS 208 also are required physics courses, and MATH 310 and STAT 441 count as upper-level physics electives.\*

**Chemical and life science engineering** (13 credits): Additional courses are PHYS 301, PHYS 320, PHYS 376, PHYS 380 and PHYZ 320 (one credit).

Courses used that are required for the chemical or life science engineering major include: CLSE 305 replaces PHYS 340; ENGR 402, ENGR 403, CLSE 402 and CLSE 403 replace PHYS 450 and PHYS 490; and CLSE 301 and CLSE 302 count as upper-level physics electives.\* PHYS 207 and PHYS 208 are also required physics courses, and STAT 441 counts as an upper-level physics elective.\*

**Computer engineering** (nine credits): Additional courses are PHYS 301, PHYS 340 and PHYS 380.

Courses used that can be taken to complete the computer engineering major include: EGRE 309 (computer engineering elective) replaces PHYS 376; and ENGR 402, ENGR 403 and EGRE 427 replace PHYS 450 and PHYS 490. EGRE 306 also counts as an upper-level physics elective,\* and the five remaining credits of upper-level physics electives\* can be

chosen from EGRE 303, EGRE 307, EGRE 310, EGRE 334 and EGRE 521. MATH 307, PHYS 320 and PHYZ 320 (one credit) are required for physics and can be used as technical electives for computer engineering. PHYS 207 and PHYS 208 are also required physics courses.

**Electrical engineering** (nine credits): Additional courses are PHYS 301, PHYS 340 and PHYS 380.

Courses used that can be taken to complete the electrical engineering major include: EGRE 309 replaces PHYS 376; and ENGR 402, ENGR 403, and one selection from EGRE 402 and EGRE 403 (both), EGRE 427 or EGRE 436 replace PHYS 450 and PHYS 490. EGRE 303 and EGRE 306 also count as upper-level physics electives,\* and the two remaining credits of upper-level physics electives\* can be chosen from EGRE 307, EGRE 310, EGRE 334 and EGRE 521. PHYS 320 and PHYZ 320 (one credit) are required for physics and can be used as technical electives for electrical engineering. PHYS 207 and PHYS 208 are required physics courses.

**Mechanical engineering** (13 credits): Additional courses are PHYS 301, PHYS 320, PHYS 376, PHYS 380 and PHYZ 320 (one credit).

Courses used that can be taken to complete the mechanical engineering major include: EGMN 302 replaces PHYS 340; and ENGR 402, ENGR 403, EGMN 402 and EGMN 403 replace PHYS 450 and PHYS 490. Taken together, EGMN 301, EGMN 309, and either STAT 441 or EGMN 351 satisfy the upper-level physics elective requirement.\* PHYS 207 and PHYS 208 are required physics courses.

Mechanical engineering majors should consult with an adviser to determine whether any upper-level physics courses can be used to satisfy mechanical engineering technical elective or nuclear engineering elective requirements.

\* Any physics/physics-related elective course as listed in the bulletin description for the B.S. in Physics.

With regard to general education requirements, students must fulfill the requirements of their primary engineering major. Any student interested in a physics double major should contact the physics department at (804) 828-1818 or [physics@vcu.edu](mailto:physics@vcu.edu).

## Department of Biomedical Engineering

**Henry J. Donahue, Ph.D.**  
Professor and chair

[biomedical.egr.vcu.edu](http://biomedical.egr.vcu.edu) (<http://biomedical.egr.vcu.edu>)

The Department of Biomedical Engineering offers programs at the baccalaureate, master's and doctoral level.

Biomedical engineering provides in-depth study in a variety of specialization areas including biomedical imaging systems, orthopaedic biomechanics, tissue and cellular engineering, biomaterials, artificial organs, human-computer interfaces, cardiovascular devices, rehabilitation and human factors engineering. The programs allow students to participate in cutting-edge research in one of the nations most advanced engineering facilities. The department has ongoing collaborations with numerous industries, federal laboratories, the VCU science departments, the university's MCV Campus, the Hunter Holmes McGuire Veterans Affairs Medical Center, the Virginia BioTechnology Research Park and numerous biomedical and clinical programs throughout the VCU Medical Center's MCV Hospitals.

- Biomedical Engineering, Bachelor of Science (B.S.) (p. 429)

## Biomedical Engineering, Bachelor of Science (B.S.)

Biomedical engineering applies engineering expertise to analyze and solve problems in biology and medicine in order to enhance health care. Students involved in biomedical engineering learn to work with living systems and to apply advanced technology to the complex problems of medical care. Biomedical engineers work with other health care professionals including physicians, nurses, therapists and technicians toward improvements in diagnostic, therapeutic and health delivery systems. Biomedical engineers may be involved with designing medical instruments and devices, developing medical software, tissue and cellular engineering, developing new procedures or conducting state-of-the-art research needed to solve clinical problems.

There are numerous areas of specialization and course work within biomedical engineering. These include:

1. Bioinstrumentation: the application of electronics and measurement techniques to develop devices used in the diagnosis and treatment of disease, including heart monitors, intensive care equipment, cardiac pacemakers and many other electronic devices.
2. Biomaterials: the development of artificial and living materials used for implantation in the human body, including those used for artificial heart valves, kidney dialysis cartridges, and artificial arteries, hips and knees.
3. Biomechanics: the study of motion, forces and deformations in the human body, including the study of blood flow and arterial disease, forces associated with broken bones and their associated repair mechanisms, mechanisms of blunt trauma including head injuries, orthopedic systems, and the forces and movement associated with human joints such as the knee and hip.
4. Tissue and cellular engineering: the application of biochemistry, biophysics and biotechnology toward the development of new cellular and tissue systems and an understanding of disease processes, including development of artificial skin and organs, cell adherence to artificial materials to prevent rejection by the body, and the development of new genetic cellular systems to treat diseases.
5. Medical imaging: the development of devices and systems to image the human body to diagnose diseases, including the development and data processing of the CAT scan, MRI (magnetic resonance imaging), medical ultrasound, X-ray and PET (positron emission tomography).
6. Rehabilitation and human factors engineering: the development of devices and prosthetics to enhance the capabilities of disabled individuals, including design of wheelchairs, walkers, artificial legs and arms, enhanced communication aids, and educational tools for the handicapped.

A unique aspect to the undergraduate biomedical engineering is the practicum series, EGRB 101 and EGRB 301, which involves biomedical engineering students participating in medical rounds at the VCU Medical Center's MCV Hospitals, in medical research laboratories throughout the medical center and the Virginia BioTechnology Research Park, and in medical seminars, case studies and medical laboratories. This unique opportunity is the only one of its kind in the nation and involves the cooperation of the VCU Medical Center, one of the nation's largest and most prestigious medical centers.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Identify and apply recent knowledge, and analyze and solve problems in the foundation areas of mathematics, the sciences and statistics.
- Identify and apply recent knowledge, and analyze and solve problems in the foundation engineering areas of electrical circuits, mechanics, biomedical engineering, and engineering systems and design.
- Identify and apply recent knowledge, and analyze and solve problems in the life sciences, including biology, physiology and anatomy, and understand the relationship between the life sciences, mathematics and engineering.
- Design and conduct lab experiments, collect, analyze and interpret data from physical and simulated systems to solve technical problems, and analyze physiology and life science laboratory experiments to integrate engineering and physiology/biology.
- Design and implement a system, component or process to meet the desired needs within a set of realistic specifications and constraints; design systems used in biomedical applications that involve the interconnection between engineering and the life sciences, including issues of health, safety and medical ethics.
- Organize ideas and write well-organized and accurate reports, including appropriate citations; deliver oral presentations to peers and supervisors using the latest presentation technologies.
- Understand the need for the various elements and facets of a career in biomedical engineering and related fields; have a recent understanding of the knowledge tools necessary to achieve lifelong learning and career development.
- Understand the nature of, and have the ability to, function on multidisciplinary and interdisciplinary teams, and understand the role that each team member brings to the overall goal.
- Attain and further master the ability to formulate, analyze and solve problems, analytically and/or experimentally, in biomedical engineering industry, in the clinical setting or in biomedical research within a few years of graduation. The career paths of BME graduates in these arenas would be enhanced as a result of these skills.
- Attain and further master the ability to understand the life and health sciences and the interconnection between engineering and the life/health sciences including biology, anatomy, physiology and biomedical engineering, with particular reference to biomedical engineering industry, in the clinical setting or in biomedical research within a few years of graduation. The career paths of BME graduates in these arenas would be enhanced as a result of these skills.
- Attain and further master the ability to articulate ideas and communicate in a clear and effective manner appropriate to their audience, in both written and and/or oral forms, with particular reference to biomedical engineering industry, in the clinical setting or in biomedical research within a few years of graduation. The career paths of BME graduates in these arenas would be enhanced as a result of these skills.
- Attain and further master the ability to work effectively in teams to solve biomedical and/or clinical problems, including the interconnection of engineering and clinical personnel toward the solution of problems of compelling clinical and biomedical interest and need, with particular reference to biomedical engineering industry, in the clinical setting or in biomedical research within a few

years of graduation. The career paths of BME graduates in these arenas would be enhanced as a result of these skills.

## Degree requirements for Biomedical Engineering, Bachelor of Science (B.S.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
<b>General Education requirements</b>		
PHYS 207	University Physics I	5
PHYS 208	University Physics II	5
Total Hours		31-34

### Collateral requirements

BIOL 152	Introduction to Biological Sciences II	3
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
MATH 200	Calculus with Analytic Geometry (fulfills approved quantitative literacy)	4
MATH 201	Calculus with Analytic Geometry	4
MATH 301	Differential Equations	3
MATH 310	Linear Algebra	3
PHIL 201	Critical Thinking About Moral Problems (fulfills approved humanities/fine arts)	3
PHYS 207	University Physics I (fulfills General Education requirement)	5
PHYS 208	University Physics II (fulfills General Education requirement)	5
STAT 441	Applied Statistics for Engineers and Scientists	3
Total Hours		24

### Major requirements

EGRB 101	Biomedical Engineering Practicum I	2
EGRB 102	Introduction to Engineering	4
EGRB 203	Introduction to Biomechanics	3
EGRB 215	Computational Methods in Biomedical Engineering I	3
EGRB 301	Biomedical Engineering Design Practicum	3
EGRB 303	Biotransport Processes	3
EGRB 307	Biomedical Instrumentation	4
EGRB 308	Biomedical Signal Processing	4
EGRB 310	Biomechanics	4

EGRB 315	Computational Methods in Biomedical Engineering II	3
EGRB 401 & EGRB 402	Biomedical Engineering Senior Design Studio and Biomedical Engineering Senior Design Studio	6
EGRB 427	Biomaterials	3
EGRE 206	Electric Circuits	4
PHIS 309	Introductory Quantitative Physiology I	4
PHIS 310	Introductory Quantitative Physiology II	4
Total Hours		54

### Open electives

Select 21 open elective credits within declared track	21
---	----

### Total minimum requirement 131 credits

#### Electives

Biomedical engineering students must select all technical electives from one of the four technical elective tracks.

#### Pre-medical track

BIOL 151	Introduction to Biological Sciences I	3
BIOS 151	Introduction to Biological Science Laboratory I	1
BIOS 152	Introduction to Biological Science Laboratory II	1
CHEM 301	Organic Chemistry	3
CHEZ 301	Organic Chemistry Laboratory I	2
CHEM 302	Organic Chemistry	3
CHEZ 302	Organic Chemistry Laboratory II	2
EGRB 403	Tissue Engineering	3
Select one of the following electives:		3
BIOL 300	Cellular and Molecular Biology	
BIOL 310	Genetics	
CHEM 403	Biochemistry I	

#### Biomechanics and biomaterials track

BIOL 300	Cellular and Molecular Biology	3
EGRB 403	Tissue Engineering	3
EGRB 405	Finite Element Analysis in Solid Mechanics	3
EGRB 406	Artificial Organs	3
EGMN 309	Material Science for Engineers	3
EGMN 420	CAE Design	3
EGMN 421	CAE Analysis	3
EGMN 427	Robotics	3
EGRE 454	Automatic Controls	4

#### Rehabilitation engineering track

EGRB 406	Artificial Organs	3
EGRB 420	Rehabilitation Engineering	3
EGRB 421	Human Factors Engineering	3
EGRB 405	Finite Element Analysis in Solid Mechanics	3
EGMN 420	CAE Design	3
EGMN 421	CAE Analysis	3

EGMN 427	Robotics	3
PSYC 406	Perception	3

**Instrumentation and electronics track**

EGMN 427	Robotics	3
EGRB 407	Physical Principles of Medical Imaging	3
EGRB 408	Advanced Biomedical Signal Processing	3
EGRB 409	Microcomputer Applications in Biomedical Engineering	3
EGRE 224	Introduction to Microelectronics	4
EGRE 254	Digital Logic Design	4
EGRE 303	Electronic Devices	3
EGRE 307	Integrated Circuits	4
EGRE 310	Microwave and Photonic Engineering	3
EGRE 335	Signals and Systems I	4
EGRE 364	Microcomputer Systems	4
EGRE 454	Automatic Controls	4

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Freshman year**

Fall semester		Hours
BIOL 152	Introduction to Biological Sciences II	3
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
EGRB 101	Biomedical Engineering Practicum I	2
MATH 200	Calculus with Analytic Geometry	4
UNIV 111	Focused Inquiry I	3
Term Hours:		16

**Spring semester**

CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
EGRB 102	Introduction to Engineering	4
MATH 201	Calculus with Analytic Geometry	4
UNIV 112	Focused Inquiry II	3
Term Hours:		15

**Sophomore year**

Fall semester		Hours
EGRE 206	Electric Circuits	4
MATH 301	Differential Equations	3
PHIS 309	Introductory Quantitative Physiology I	4
PHYS 207	University Physics I	5
Term Hours:		16

**Spring semester**

EGRB 203	Introduction to Biomechanics	3
EGRB 215	Computational Methods in Biomedical Engineering I	3
MATH 310	Linear Algebra	3
PHIS 310	Introductory Quantitative Physiology II	4
PHYS 208	University Physics II	5
Term Hours:		18

**Junior year****Fall semester**

EGRB 307	Biomedical Instrumentation	4
EGRB 310	Biomechanics	4
EGRB 427	Biomaterials	3
PHIL 201	Critical Thinking About Moral Problems	3
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		17

**Spring semester**

EGRB 301	Biomedical Engineering Design Practicum	3
EGRB 303	Biotransport Processes	3
EGRB 308	Biomedical Signal Processing	4
EGRB 315	Computational Methods in Biomedical Engineering II	3
Approved social/behavioral science		3
Term Hours:		16

**Senior year****Fall semester**

EGRB 401	Biomedical Engineering Senior Design Studio	3
STAT 441	Applied Statistics for Engineers and Scientists	3
Technical electives		9
Approved humanities/fine arts		3
Term Hours:		18

**Spring semester**

EGRB 402	Biomedical Engineering Senior Design Studio	3
Technical electives		12
Term Hours:		15
Total Hours:		131

## Department of Chemical and Life Science Engineering

**B. Frank Gupton, Ph.D.**

Research professor and chair

[chemical.egr.vcu.edu](http://chemical.egr.vcu.edu) (<http://chemical.egr.vcu.edu>)

Chemical and life science engineering represents the formal interaction of chemical engineering with the life sciences. VCU's Department of Chemical and Life Science Engineering is uniquely poised to bring these two premier disciplines together to form a program distinct in the nation. Programs are offered at the undergraduate and graduate levels.

Life science engineering — with interest areas including stem cell and stem cell-derived tissue engineering, biosciences/biotechnology, cellular engineering, biochips and biosensors, bioinformatics and molecular biocomputing, genetic and protein molecular engineering, environmental life science engineering, and molecular- and cellular-based therapeutics — is the fastest growing of all industries that currently employ engineers.

Chemical engineering and life science engineering share a broad range of common foundational knowledge bases, including the principles of mass and energy balances, transport phenomena and thermodynamics, surface and interfacial science, and reaction science and engineering. Strong academic and research programs in chemical and life science

engineering will provide a wealth of exciting professional opportunities for successful graduates of the VCU program.

The bachelor's program offers tracks in chemical engineering and life science engineering, and a chemical and life science engineering track is available in the Master of Science in Engineering program, as well as the Ph.D. in Engineering program. The CLSE tracks in the graduate-level programs are designed primarily for students who are interested in applying chemical and engineering principles toward important contemporary topics including process design, metabolic engineering, biosensor and biochip development, high-performance polymers in medicine and energy conversion, polymer surface science, and environmentally benign polymer processing technologies. Major emphasis is placed on chemical and life science engineering fundamentals with additional emphasis on applied chemistry and life sciences.

Chemical and Life Science Engineering, Bachelor of Science (B.S.) with a concentration in:

- Chemical engineering (p. 432)
- Life science engineering (p. 434)
- Chemical and life science engineering, minor in (p. 436)

## Chemical and Life Science Engineering, Bachelor of Science (B.S.) with a concentration in chemical engineering

The department offers a Bachelor of Science in Chemical and Life Science Engineering, and includes a chemical engineering concentration and a life science engineering concentration. Each student must choose the desired concentration upon initial registration.

As part of the B.S. degree in chemical and life science engineering, all students complete an approved internship or cooperative education experience.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- a. Apply knowledge of mathematics, science and engineering
- b. Design and conduct experiments, as well as to analyze and interpret data
- c. Design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
- d. Function on multidisciplinary teams
- e. Identify, formulate and solve engineering problems
- f. Gain an understanding of professional and ethical responsibility
- g. Communicate effectively
- h. Complete the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context
- i. Recognize the need for, and an ability to engage in, lifelong learning
- j. Gain knowledge of contemporary issues
- k. Use the techniques, skills and modern engineering tools necessary for engineering practice

- l. Understand hazards associated with chemical, physical and/or biological processes

## Special requirements

Students must receive a grade of C in all engineering courses in order to graduate. Grades of C or better in the two introductory courses, CLSE 201 and CLSE 202, are required before students may take additional CLSE courses. However, after the two introductory courses, students are allowed to continue with one D grade in any CLSE course. They must retake that course in order to graduate, but may continue taking other CLSE courses. Students are not allowed to continue with two grades of D in CLSE courses before retaking at least one of those courses with a minimum grade of C.

## Degree requirements for Chemical and Life Science Engineering, Bachelor of Science (B.S.) with a concentration in chemical engineering

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### General Education requirements

PHYS 207	University Physics I	5
PHYS 208	University Physics II	5
Total Hours		10

## Collateral requirements

BIOL 151	Introduction to Biological Sciences I	3
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
ECON 205	The Economics of Product Development and Markets	3
MATH 201	Calculus with Analytic Geometry	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
Technical electives (300+ level science, math, business or management course)		6
STAT 441	Applied Statistics for Engineers and Scientists	3
Total Hours		44



## Major requirements

CLSE 101	Introduction to Engineering	3
CLSE 115	Introduction to Programming for Chemical and Life Science Engineering	4
CLSE 201	Chemical Engineering Fundamentals I: Material Balances	4
CLSE 202	Chemical Engineering Fundamentals II: Energy Balances and Engineering Thermodynamics	4
CLSE 301	Transport Phenomena I	3
CLSE 302	Transport Phenomena II	3
CLSE 305	Thermodynamics of Phase Equilibria and Chemical Reactions	3
CLSE 312	Chemical Reaction Engineering	3
CLSE 320	Instrumentation Laboratory	2
CLSE 402	Senior Design Studio I (Laboratory/Project Time) (Laboratory/Project Time)	2
CLSE 403	Senior Design Studio II (Laboratory/Project Time) (Laboratory/Project Time)	2
CLSE 409	Process Control in Chemical and Life Science Engineering	3
CLSE 440	Unit Operations Laboratory	2
ENGR 395	Professional Development	1
ENGR 402	Senior Design Studio (Seminar) (Seminar)	1
ENGR 403	Senior Design Studio (Seminar) (Seminar)	1
Approved internship or cooperative education experience		0
ENGR 296 or ENGR 396 or ENGR 398	Part-time Internship Experience Internship Experience Cooperative Education Experience	
Review of internship or cooperative education experience		0
ENGR 496 or ENGR 498	Internship Review Review of Cooperative Education Experience	0
Engineering elective (300+ level)		9
Total Hours		50

## Total minimum requirement 126 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
BIOL 101	Biological Concepts (satisfies University Core natural/physical sciences)	3
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CLSE 101	Introduction to Engineering	3
MATH 200	Calculus with Analytic Geometry (satisfies University Core quantitative literacy)	4
UNIV 111	Focused Inquiry I	3
Term Hours:		17

### Spring semester

CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CLSE 115	Introduction to Programming for Chemical and Life Science Engineering	4
ENGR 395	Professional Development	1
MATH 201	Calculus with Analytic Geometry	4
UNIV 112	Focused Inquiry II	3
Term Hours:		16

### Sophomore year

Fall semester		
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CLSE 201	Chemical Engineering Fundamentals I: Material Balances	4
MATH 301	Differential Equations	3
PHYS 207	University Physics I	5
Term Hours:		17

### Spring semester

CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CLSE 202	Chemical Engineering Fundamentals II: Energy Balances and Engineering Thermodynamics	4
MATH 307	Multivariate Calculus	4
PHYS 208	University Physics II	5
Term Hours:		18

### Junior year

Fall semester		
BIOL 151	Introduction to Biological Sciences I	3
CLSE 301	Transport Phenomena I	3
CLSE 305	Thermodynamics of Phase Equilibria and Chemical Reactions	3
UNIV 200	Inquiry and the Craft of Argument	3
Engineering elective (300+ level)		3
Term Hours:		15

### Spring semester

CLSE 302	Transport Phenomena II	3
CLSE 312	Chemical Reaction Engineering	3
CLSE 320	Instrumentation Laboratory	2
ECON 205	The Economics of Product Development and Markets	3
STAT 441	Applied Statistics for Engineers and Scientists	3
Term Hours:		14

### Senior year

Fall semester		
CLSE 402	Senior Design Studio I (Laboratory/Project Time) (Laboratory/Project Time)	2
CLSE 409	Process Control in Chemical and Life Science Engineering	3
CLSE 440	Unit Operations Laboratory	2
ENGR 402	Senior Design Studio (Seminar) (Seminar)	1

ENGR 496	Internship Review	0
or ENGR 498	or Review of Cooperative Education Experience	
PHIL 201	Critical Thinking About Moral Problems (satisfies University Core humanities/fine arts)	3
Technical elective (300+ level science, math, business or management course)		3
Term Hours:		14
<b>Spring semester</b>		
CLSE 403	Senior Design Studio II (Laboratory/Project Time) (Laboratory/Project Time)	2
ENGR 403	Senior Design Studio (Seminar) (Seminar)	1
ECON 101	Introduction to Political Economy (Approved social/behavioral sciences)	3
Engineering electives (300+ level)		6
Technical elective (300+ level science, math, business or management course)		3
Term Hours:		15
Total Hours:		126

## Chemical and Life Science Engineering, Bachelor of Science (B.S.) with a concentration in life science engineering

The department offers a Bachelor of Science in Chemical and Life Science Engineering, and includes a chemical engineering concentration and a life science engineering concentration. Each student must choose the desired concentration upon initial registration.

As part of the B.S. degree in chemical and life science engineering, all students complete an approved internship or cooperative education experience.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Apply knowledge of mathematics, science and engineering
- Design and conduct experiments, as well as to analyze and interpret data
- Design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
- Function on multidisciplinary teams
- Identify, formulate and solve engineering problems
- Gain an understanding of professional and ethical responsibility
- Communicate effectively
- Complete the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context
- Recognize the need for, and an ability to engage in, lifelong learning
- Gain knowledge of contemporary issues
- Use the techniques, skills and modern engineering tools necessary for engineering practice

- Understand hazards associated with chemical, physical and/or biological processes

### Special requirements

Students must receive a grade of C in all engineering courses in order to graduate. Grades of C or better in the two introductory courses, CLSE 201 and CLSE 202, are required before students may take additional CLSE courses. However, after the two introductory courses, students are allowed to continue with one D grade in any CLSE course. They must retake that course in order to graduate, but may continue taking other CLSE courses. Students are not allowed to continue with two grades of D in CLSE courses before retaking at least one of those courses with a minimum grade of C.

## Degree requirements for Chemical and Life Science Engineering, Bachelor of Science (B.S.) with a concentration in life science engineering

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### General Education requirements

PHYS 207	University Physics I	5
PHYS 208	University Physics II	5
Total Hours		10

### Collateral requirements

CHEM 403	Biochemistry I	3
BIOL 151	Introduction to Biological Sciences I	3
BIOL 152	Introduction to Biological Sciences II	4
& BIOZ 152	and Introduction to Biological Science Laboratory II	
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
ECON 205	The Economics of Product Development and Markets	3
MATH 201	Calculus with Analytic Geometry	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4

STAT 441	Applied Statistics for Engineers and Scientists	3
Total Hours		45

## Major requirements

CLSE 101	Introduction to Engineering	3
CLSE 115	Introduction to Programming for Chemical and Life Science Engineering	4
CLSE 201	Chemical Engineering Fundamentals I: Material Balances	4
CLSE 202	Chemical Engineering Fundamentals II: Energy Balances and Engineering Thermodynamics	4
CLSE 301	Transport Phenomena I	3
CLSE 302	Transport Phenomena II	3
CLSE 305	Thermodynamics of Phase Equilibria and Chemical Reactions	3
CLSE 312	Chemical Reaction Engineering	3
CLSE 320	Instrumentation Laboratory	2
CLSE 402	Senior Design Studio I (Laboratory/Project Time) (Laboratory/Project Time)	2
CLSE 403	Senior Design Studio II (Laboratory/Project Time) (Laboratory/Project Time)	2
CLSE 409	Process Control in Chemical and Life Science Engineering	3
CLSE 440	Unit Operations Laboratory	2
ENGR 395	Professional Development	1
ENGR 402	Senior Design Studio (Seminar) (Seminar)	1
ENGR 403	Senior Design Studio (Seminar) (Seminar)	1
Approved internship or cooperative education experience		0
ENGR 296	Part-time Internship Experience	
or ENGR 396	Internship Experience	
or ENGR 398	Cooperative Education Experience	
Review of internship or cooperative education experience		0
ENGR 496	Internship Review	
or ENGR 498	Review of Cooperative Education Experience	
Engineering elective (300+ level)		9
Total Hours		50

## Total minimum requirement 127 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
BIOL 101	Biological Concepts (satisfies University Core natural/physical sciences)	3
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CLSE 101	Introduction to Engineering	3
MATH 200	Calculus with Analytic Geometry	4

UNIV 111	Focused Inquiry I	3
Term Hours:		17

### Spring semester

CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
CLSE 115	Introduction to Programming for Chemical and Life Science Engineering	4
ENGR 395	Professional Development	1
MATH 201	Calculus with Analytic Geometry	4
UNIV 112	Focused Inquiry II	3
Term Hours:		16

### Sophomore year

#### Fall semester

CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CLSE 201	Chemical Engineering Fundamentals I: Material Balances	4
MATH 301	Differential Equations	3
PHYS 207	University Physics I	5
Term Hours:		17

#### Spring semester

CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CLSE 202	Chemical Engineering Fundamentals II: Energy Balances and Engineering Thermodynamics	4
MATH 307	Multivariate Calculus	4
PHYS 208	University Physics II	5
Term Hours:		18

### Junior year

#### Fall semester

BIOL 151	Introduction to Biological Sciences I	3
CLSE 301	Transport Phenomena I	3
CLSE 305	Thermodynamics of Phase Equilibria and Chemical Reactions	3
ECON 205	The Economics of Product Development and Markets	3
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		15

#### Spring semester

BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
CLSE 302	Transport Phenomena II	3
CLSE 312	Chemical Reaction Engineering	3
CLSE 320	Instrumentation Laboratory	2
STAT 441	Applied Statistics for Engineers and Scientists	3
Term Hours:		15

### Senior year

#### Fall semester

CHEM 403	Biochemistry I	3
CLSE 402	Senior Design Studio I (Laboratory/Project Time) (Laboratory/Project Time)	2

CLSE 409	Process Control in Chemical and Life Science Engineering	3
CLSE 440	Unit Operations Laboratory	2
ENGR 402	Senior Design Studio (Seminar) (Seminar)	1
ENGR 496 or ENGR 498	Internship Review or Review of Cooperative Education Experience	0
PHIL 201	Critical Thinking About Moral Problems (satisfies University Core humanities/fine arts)	3
Term Hours:		14
<b>Spring semester</b>		
CLSE 403	Senior Design Studio II (Laboratory/Project Time) (Laboratory/Project Time)	2
ENGR 403	Senior Design Studio (Seminar) (Seminar)	1
ECON 101 or PSYC 101	Introduction to Political Economy or Introduction to Psychology	3
Engineering electives (300+ level)		9
Term Hours:		15
Total Hours:		127

## Chemical and life science engineering, minor in

The minor in chemical and life science engineering consists of 20 credits and requires completion of these courses:

CLSE 201	Chemical Engineering Fundamentals I: Material Balances	4
CLSE 202	Chemical Engineering Fundamentals II: Energy Balances and Engineering Thermodynamics	4
CLSE 301	Transport Phenomena I	3
CLSE 302	Transport Phenomena II	3
CLSE 305	Thermodynamics of Phase Equilibria and Chemical Reactions	3
CLSE 312	Chemical Reaction Engineering	3
Total Hours		20

## Department of Computer Science

Krzysztof J. Cios, Ph.D.

Professor and chair

computer-science.egr.vcu.edu (<http://computer-science.egr.vcu.edu>)

The Department of Computer Science offers undergraduate and graduate programs. The Bachelor of Science in Computer Science is a rigorous, highly concentrated curriculum of computer science courses. It includes advanced study in several important areas of computer science and provides a strong foundation in this discipline. Every course is taught by full-time faculty members who also serve as advisers to both undergraduate and graduate students.

The master's degree program emphasizes continuing self-development of individuals currently engaged in science-, technology- and engineering-related fields. It prepares persons who have completed undergraduate

majors in these fields for entry into careers in areas that use computing technology. Both the theoretical and applied aspects of computer science are emphasized in this program. The program offers courses in a wide range of areas in computer science including machine learning, artificial intelligence, cybersecurity and cloud computing, data mining, bioinformatics, and medical informatics.

- Computer Science, Bachelor of Science (B.S.) (p. 436)
- Accelerated Bachelor of Science (B.S.) and Master of Science (M.S.) in Computer Science (p. 438)
- Computer science, minor in (p. 439)
- Computer Science, Certificate in (Post-baccalaureate undergraduate certificate) (p. 439)

## Computer Science, Bachelor of Science (B.S.)

The Bachelor of Science in Computer Science is built on a rigorous, highly concentrated, accredited curriculum of computer science courses. The program provides a strong foundation in the discipline and includes advanced study in several important areas of computer science.

The degree requires a minimum of 120 credit hours and includes undergraduate requirements, general education requirements and computer science major requirements.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. **Computing and math**  
An ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline
2. **Problem analysis and requirement specification**  
An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution
3. **Design, implement and test programs and systems**  
An ability to design, implement and evaluate a computer-based system, process, component or program to meet desired needs
4. **Teamwork**  
An ability to function effectively on teams to accomplish a common goal
5. **Ethical issues**  
An understanding of professional, ethical, legal, security and social issues and responsibilities
6. **Oral and written communications**  
An ability to communicate effectively with a range of audiences
7. **Local and global impact of computing**  
An ability to analyze the local and global impact of computing on individuals, organizations and society
8. **Continuing professional development**  
Recognition of the need for and an ability to engage in continuing professional development
9. **Current techniques, skills and tools** An ability to use current techniques, skills and tools necessary for computing practice

## Special requirements

Students must receive a minimum grade of C in all computer science courses in order to graduate

## Degree requirements for Computer Science, Bachelor of Science (B.S.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4

#### General Education requirements

Humanities electives from list below (in addition to those in University Core)	9
Total Hours	30-33

### Collateral requirements

Select one of the following options: 8-10

#### Option A:

CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	

#### Option B:

PHYS 207 & PHYS 208	University Physics I and University Physics II	
------------------------	---	--

#### Option C:

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	
ECON 205	The Economics of Product Development and Markets	3
MATH 200	Calculus with Analytic Geometry (satisfies quantitative literacy)	4
MATH 201	Calculus with Analytic Geometry	4
Select two upper-level (300- to 400-level) MATH courses		6
STAT 212	Concepts of Statistics	3
Natural science electives (BIOL, CHEM or PHYS courses that count toward the major in that science)		6
Total Hours		30-32

### Major requirements

CMSC 255	Introduction to Programming	4
CMSC 256	Data Structures and Object Oriented Programming	3
CMSC 257	Computer Systems	3

CMSC 302	Introduction to Discrete Structures	3
CMSC 303	Introduction to the Theory of Computation	3
CMSC 311	Computer Organization	3
CMSC 312	Introduction to Operating Systems	3
CMSC 355	Software Engineering: Specification and Design	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
CMSC 403	Programming Languages	3
CMSC 451 & CMSC 452	Senior Project and Senior Project (capstone courses)	6
CMSC 508	Database Theory	3
CMSC upper-level electives		9
Total Hours		49

### Open electives

Select 9-11 open elective credits 9-11

### Total minimum requirement 120 credits

#### CMSC upper-level electives

CMSC 409	Artificial Intelligence	3
CMSC 411	Computer Graphics	3
CMSC 412	Social Network Analysis and Cybersecurity Risks	3
CMSC 413	Introduction to Cybersecurity	3
CMSC 414	Computer and Network Security	3
CMSC 415	Introduction to Cryptography	3
CMSC 416	Introduction to Natural Language Processing	3
CMSC 420	Software Engineering: Project Management	3
CMSC 491	Topics in Computer Science	1-3
CMSC 492	Independent Study	2-4
CMSC 506	Computer Networks and Communications	3

#### Approved humanities electives

Select nine credits from the following programs or subject areas: 9

African-American studies
American studies
Anthropology
School of the Arts
English
Foreign language
History
Philosophy
Psychology
Religious studies
Social work
Sociology
Urban studies



Some courses in other programs (including most honors modules and other courses that focus on human behavior, communication and/or social interaction) may be counted toward this requirement with departmental approval.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester			Hours
CMSC 255	Introduction to Programming		4
UNIV 111	Focused Inquiry I		3
Approved humanities electives			6
Approved natural/physical sciences			3
Term Hours:			16

### Spring semester

CMSC 256	Data Structures and Object Oriented Programming		3
CMSC 302	Introduction to Discrete Structures		3
ECON 205	The Economics of Product Development and Markets		3
MATH 200	Calculus with Analytic Geometry		4
UNIV 112	Focused Inquiry II		3
Term Hours:			16

### Sophomore year

Fall semester			Hours
CMSC 257	Computer Systems		3
CMSC 355	Software Engineering: Specification and Design		3
MATH 201	Calculus with Analytic Geometry		4
UNIV 200	Inquiry and the Craft of Argument		3
Approved humanities/fine arts			3
Term Hours:			16

### Spring semester

CMSC 303	Introduction to the Theory of Computation		3
CMSC 311	Computer Organization		3
STAT 212	Concepts of Statistics		3
Approved humanities elective			4
Approved social/behavioral sciences			3
Term Hours:			16

### Junior year

Fall semester			Hours
CMSC 312	Introduction to Operating Systems		3
CMSC 401	Algorithm Analysis with Advanced Data Structures		3
Approved natural science elective (BIOL, CHEM or PHYS course that count toward the major in that science)			3
Select one of the following:			4-5
CHEM 101	General Chemistry		4
& CHEZ 101	and General Chemistry Laboratory I		
PHYS 207	University Physics I		5

BIOL 151	Introduction to Biological Sciences I		4
& BIOZ 151	and Introduction to Biological Science Laboratory I		
Term Hours:			13-14

### Spring semester

CMSC 403	Programming Languages		3
CMSC 508	Database Theory		3
MATH upper-level (300- to 400-)			3
Select one of the following:			4-5
CHEM 102	General Chemistry		4
& CHEZ 102	and General Chemistry Laboratory II		
PHYS 208	University Physics II		5
BIOL 152	Introduction to Biological Sciences II		4
& BIOZ 152	and Introduction to Biological Science Laboratory II		
Term Hours:			13-14

### Senior year

Fall semester			Hours
CMSC 451	Senior Project (capstone)		3
CMSC upper-level electives			6
MATH upper-level (300- to 400-)			3
Approved natural science elective (BIOL, CHEM or PHYS course that count toward the major in that science)			3
Term Hours:			15

### Spring semester

CMSC 452	Senior Project (capstone)		3
CMSC upper-level elective			3
Open electives			9
Term Hours:			15
Total Hours:			120-122

## Total minimum requirement 120 credits Accelerated Bachelor of Science (B.S.) and Master of Science (M.S.) in Computer Science

Students accepted into this selective program accomplish both the B.S. and M.S. degrees within five years by taking additional graduate courses within the first four years of the program. Up to two of these courses will count as open electives in the B.S. program and as didactic course work in the M.S. program.

## Program administration and minimum requirements

In order to be accepted students must:

1. Apply to the computer science graduate committee during the first semester after they have completed the last of the following sequence of classes:

CMSC 255	Introduction to Programming		4
CMSC 256	Data Structures and Object Oriented Programming		3
CMSC 257	Computer Systems		3

CMSC 302	Introduction to Discrete Structures	3
CMSC 303	Introduction to the Theory of Computation	3
CMSC 311	Computer Organization	3

Transfer students who enter with all of these courses (or equivalents) must apply during their first semester at VCU.

2. Have a minimum GPA of 3.4 based on CMSC 255, CMSC 256, CMSC 257, CMSC 302, CMSC 303 and CMSC 311; all grades in any repeated courses will be included in computing this GPA. Students transferring these courses into the program will have the grades from their previous institution included in computing this GPA only for purposes of determining eligibility for this program.
3. Have a minimum overall GPA of 3.0.

In the last semester before graduating with the B.S. degree, the student will formally apply to the master's program. Providing the student has maintained a minimum GPA of 3.2 in the major, acceptance to the M.S. program is guaranteed. Accepted students are not required to complete the GRE for admission to the M.S. portion of the program.

## Special regulations in the accelerated program

Students accepted into the B.S.-M.S. program are allowed to transfer up to 12 graduate-level credits into the M.S. program, including up to six credit hours that were counted as open electives toward requirements for the B.S. degree.

After meeting all requirements for the B.S. degree, students in the program are eligible to take 600-level courses.

Apart from the exceptions above, all regulations outlined in the B.S. in Computer Science and M.S. in Computer Science bulletins apply toward the respective degrees.

## Typical program of study

Before graduating with the B.S. degree, students in the program are expected to:

- Take six graduate-level didactic credits that will count as open electives toward their B.S. degree (that is, toward the requirements on total number of credits, upper-level credits and toward graduation GPA, but not as the required three CMSC technical electives) and as didactic credits toward their M.S. degree.
- Take an additional six graduate-level didactic credit hours that will count toward their M.S. degree but not toward the B.S. degree. In particular, these cannot be used to satisfy the total and upper-level credit requirements in the B.S. degree nor in calculating the B.S. graduation GPA.

Students cannot count more than six credit hours of non-CMSC courses toward the M.S. degree. Any non-CMSC graduate credits require approval of the graduate committee.

The typical full program of study in the accelerated B.S.-M.S. program is as follows:

### Years 1-3

- Regular undergraduate program course work

### Year 3

- Application to the accelerated B.S.-M.S. program

### Year 4

- Remaining regular undergraduate program course work
- Six credit hours of CMSC 500-level courses, counted toward B.S. and M.S.
- Six credit hours of CMSC 500-level courses, counted toward M.S. only
- Application to the M.S. program

### Year 5

Regular graduate program course work: 18 credits of CMSC 500-level and 600-level courses, counted toward M.S. only.

## Computer Science, Certificate in (Post-baccalaureate undergraduate certificate)

The Certificate in Computer Science is available to students who have received bachelor's degrees in other subject areas and wish to pursue the study of computer science. Additionally students must have completed one semester of calculus or discrete mathematics (MATH 200 or MATH 211 or equivalent with a minimum grade of B) and maintained a minimum overall GPA of 3.0 in their bachelor's degree for acceptance into the program. Students who receive the certificate through this program equip themselves for many professional opportunities in the scientific community and with government agencies. The certificate is also designed to allow interested students to prepare for graduate study in computer science.

This program requires a minimum of 30 credits in computer science at the 200 level or higher. Appropriate course work completed before or after receiving the bachelor's degree can be applied to the certification with approval.

### Required courses

CMSC 255	Introduction to Programming	4
CMSC 256	Data Structures and Object Oriented Programming	3
CMSC 257	Computer Systems	3
CMSC 302	Introduction to Discrete Structures	3
CMSC 311	Computer Organization	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3

### Additional courses

The remaining four courses must be at a 300-level or higher in computer science.	11
<b>Total Hours</b>	<b>30</b>

For additional specializations, check departmental requirements.

Upon successful completion of all course work in five years or less, with a minimum GPA of 2.5, the student is awarded the computer science certificate. Successful completion of this program does not guarantee admission to the master's degree program in computer science.

## Computer science, minor in

The minor in computer science consists of at least 18 credits in computer science, including the following:

CMSC 255	Introduction to Programming	4
----------	-----------------------------	---

or EGRE 245	Engineering Programming Using C	
CMSC 256	Data Structures and Object Oriented Programming	3
or EGRE 246	Advanced Engineering Programming Using C++	
Select nine upper-level credits in computer science		9
Select at least two additional credits in computer science		2
Total Hours		18

A minimum GPA of 2.0 must be achieved in the minor.

## Department of Electrical and Computer Engineering

**Erdem Topsakal, Ph.D.**

Professor and chair

electrical-and-computer.egr.vcu.edu (<http://electrical-and-computer.egr.vcu.edu>)

The Department of Electrical and Computer Engineering prepares students for highly competitive, national placement in electrical and computer engineering employment and graduate education by providing a thorough grounding in electrical science and design, together with a sound foundation in mathematics, basic sciences and life skills.

The department offers baccalaureate degrees in computer engineering and electrical engineering, in addition to minors in both areas, as well as the option to choose course work appropriate for a pre-medicine or pre-dentistry curriculum. An electrical and computer engineering track is available in the Master of Science in Engineering as well as the Ph.D. in Engineering. The track is designed to prepare students for practice, research and/or teaching of electrical and computer engineering at the advanced level by providing intensive preparation for professional practice in the microelectronics, nanoelectronics, computer engineering and controls and communications aspects of electrical and computer engineering. At the advanced level, this track prepares individuals to perform original, leading edge research in the broad areas of microelectronics, nanoelectronics, controls and communications and computer engineering.

The curricula of the department provide a strong foundation in the fundamentals of the profession, including engineering problem solving, breadth in the major facets of the profession and the opportunity to specialize in today's critical areas of computer engineering, communication systems and microelectronics. Graduates will be well prepared for constant technological change and growth through lifelong learning.

- Computer Engineering, Bachelor of Science (B.S.) (p. 440)
- Electrical Engineering, Bachelor of Science (B.S.) (p. 442)
- Computer engineering, minor in (p. 445)
- Electrical engineering, minor in (p. 445)

## Computer Engineering, Bachelor of Science (B.S.)

Computer engineers are responsible for developing the powerful computer systems that have become a part of our everyday life. Applications for computer engineering span the spectrum from high-performance, general-purpose computing systems such as desktop

workstations used in all facets of business, to small microprocessors embedded in larger systems and functioning as controllers. These latter applications, known as embedded systems, can be found in control systems for trains, aircraft and automobiles; medical equipment; telecommunications systems; and consumer electronics and appliances. This explosive growth of computer systems in use in almost every new appliance or vehicle has resulted in a strong demand for engineers trained in the development of these systems, and all indications are that this trend will continue for the foreseeable future.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Apply knowledge of mathematics, science and engineering
- Design and conduct experiments, as well as to analyze and interpret data
- Design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
- Function on multidisciplinary teams
- Identify, formulate and solve engineering problems
- Gain an understanding of professional and ethical responsibility
- Communicate effectively
- Complete the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context
- Recognize the need for, and an ability to engage in, lifelong learning
- Gain knowledge of contemporary issues
- Use the techniques, skills and modern engineering tools necessary for engineering practice

## Special requirements

Program D grade policy: Students must receive a minimum grade of C in all engineering, computer science, physics, mathematics and all technical electives to graduate.

## Degree requirements for Computer Engineering, Bachelor of Science (B.S.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		4
Approved social/behavioral sciences		3-4

#### Additional General Education requirements

CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
ECON 205	The Economics of Product Development and Markets	3

SPCH 321	Speech for Business and the Professions	3
Total Hours		32-34

### Collateral requirements

MATH 200	Calculus with Analytic Geometry (satisfies approved quantitative literacy)	4
MATH 201	Calculus with Analytic Geometry	4
MATH 211	Mathematical Structures	3
MATH 301	Differential Equations	3
PHIL 201	Critical Thinking About Moral Problems (satisfies approved humanities/fine arts)	3
PHYS 207	University Physics I	5
PHYS 208	University Physics II	5
Total Hours		20

### Major requirements

CMSC 312	Introduction to Operating Systems	3
CMSC 355	Software Engineering: Specification and Design	3
EGRE 101	Introduction to Engineering	4
EGRE 206	Electric Circuits	4
EGRE 207	Electric Circuits II	4
EGRE 224	Introduction to Microelectronics	4
EGRE 245	Engineering Programming Using C	4
EGRE 246	Advanced Engineering Programming Using C++	3
EGRE 254	Digital Logic Design	4
EGRE 335	Signals and Systems I	4
EGRE 337	Signals and Systems II	3
EGRE 364	Microcomputer Systems	4
EGRE 365	Digital Systems	4
EGRE 426	Computer Organization and Design	3
EGRE 427	Advanced Digital Design	4
ENGR 402	Senior Design Studio (Seminar)	2
& ENGR 403	and Senior Design Studio (Seminar)	
Technical electives (see list and requirements below)		21
Total Hours		78

### Total minimum requirement 130 credits

#### Technical electives (21 credits)

The 21 credit hours in the junior and senior year must be chosen from the approved lists. The following criteria must be met:

- At least twelve credit hours must come from the electrical and computer engineering or computer science areas
- At least three credit hours must come from outside the electrical and computer engineering and computer science areas
- Courses not from the approved lists must be approved by the adviser and department chair.
- Courses must be technical courses at the 300 level or above.
- No more than three credit hours may come from independent study courses.

- If a student wants to apply EGRE 397 and EGRE 497 toward their technical electives, a minimum of four credit hours must be earned from either one or a combination of both.

- A maximum of eight credits of EGRE 397 or EGRE 497 or a combination thereof may be used toward technical electives.

Note: Some of the listed courses may have prerequisites that do not count as technical electives.

#### Approved electives in electrical and computer engineering

EGMN 315	Process and Systems Dynamics	3
EGMN 416	Mechatronics	3
EGMN 427	Robotics	3
EGRE 303	Electronic Devices	3
EGRE 307	Integrated Circuits	4
EGRE 309	Electromagnetic Fields	3
EGRE 310	Microwave and Photonic Engineering	3
EGRE 334	Introduction to Microfabrication	4
EGRE 336	Introduction to Communication Systems	3
EGRE 397	Vertically Integrated Projects in Electrical and Computer Engineering	1
EGRE 435	Microscale and Nanoscale Fabrication	4
EGRE 436	Advanced Microscale and Nanoscale Fabrication	4
EGRE 444	Communication Systems	3
EGRE 454	Automatic Controls	4
EGRE 455	Control Systems Design	3
EGRE 471	Power System Analysis	3
EGRE 497	Vertically Integrated Project in Electrical and Computer Engineering	2
EGRE 521	Advanced Semiconductor Devices	3
EGRE 522		
EGRE 525	Fundamentals of Photonics Engineering	3
EGRE 526/CMSC 506	Computer Networks and Communications	3
EGRE 531	Multicore and Multithreaded Programming	3
EGRE 533	VLSI Design	4
EGRE 535	Digital Signal Processing	3
EGRE 553	Industrial Control Systems	3
EGRE 555	Dynamics and Multivariable Control I	3
EGRE 572	Electric Machines	3
ENGR 410	Review of Internship (completion of internship required)	1

#### Approved electives in computer science

CMSC 302	Introduction to Discrete Structures	3
CMSC 303	Introduction to the Theory of Computation	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
CMSC 403	Programming Languages	3
CMSC 404	Compiler Construction	3
CMSC 409	Artificial Intelligence	3

CMSC 411	Computer Graphics	3
CMSC 420	Software Engineering: Project Management	3
<b>Approved electives outside electrical and computer engineering and computer science</b>		
EGMN 309	Material Science for Engineers	3
EGMN 321	Numerical Methods	3
EGMN 350		3
EGRB 407	Physical Principles of Medical Imaging	3
EGRB 408	Advanced Biomedical Signal Processing	3
EGRB 507	Biomedical Electronics and Instrumentation	3
MATH 307	Multivariate Calculus	4
MATH 310	Linear Algebra	3
MATH 327		
MATH 351	Applied Abstract Algebra	3
PHYS 307	The Physics of Sound and Music	3
PHYS 320	Modern Physics	3
PHYZ 320	Modern Physics Laboratory	1

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
CHEM 101	General Chemistry	4
& CHEZ 101	and General Chemistry Laboratory I	
EGRE 101	Introduction to Engineering	4
MATH 200	Calculus with Analytic Geometry (satisfies approved quantitative literacy)	4
UNIV 111	Focused Inquiry I	3
Term Hours:		15

#### Spring semester

EGRE 245	Engineering Programming Using C	4
MATH 201	Calculus with Analytic Geometry	4
PHYS 207	University Physics I	5
UNIV 112	Focused Inquiry II	3
Term Hours:		16

#### Sophomore year

Fall semester		Hours
EGRE 206	Electric Circuits	4
EGRE 246	Advanced Engineering Programming Using C++	3
MATH 301	Differential Equations	3
PHYS 208	University Physics II	5
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		18

#### Spring semester

EGRE 207	Electric Circuits II	4
EGRE 254	Digital Logic Design	4
EGRE 335	Signals and Systems I	4

MATH 211	Mathematical Structures	3
Term Hours:		15

#### Junior year

##### Fall semester

CMSC 355	Software Engineering: Specification and Design	3
EGRE 224	Introduction to Microelectronics	4
EGRE 337	Signals and Systems II	3
EGRE 364	Microcomputer Systems	4
EGRE 365	Digital Systems	4
Term Hours:		18

##### Spring semester

CMSC 312	Introduction to Operating Systems	3
ECON 205	The Economics of Product Development and Markets	3
Approved social/behavioral science		3
Technical elective		6
Term Hours:		15

#### Senior year

##### Fall semester

EGRE 426	Computer Organization and Design	3
ENGR 402	Senior Design Studio (Seminar)	1
SPCH 321	Speech for Business and the Professions	3
Approved natural/physical science		3
Technical electives		8
Term Hours:		18

##### Spring semester

EGRE 427	Advanced Digital Design	4
ENGR 403	Senior Design Studio (Seminar)	1
PHIL 201	Critical Thinking About Moral Problems (satisfies approved humanities/fine arts)	3
Technical electives		7
Term Hours:		15
Total Hours:		130

## Electrical Engineering, Bachelor of Science (B.S.)

The profession of electrical engineering touches all aspects of our lives in that electrical engineers design and fabricate devices and systems critical in applications such as computing, communications, health care, manufacturing and automation, power generation and utilization, transportation, and entertainment. An element very important to these and many other applications is the microelectronic device or system.

In the sub-area of microelectronics, electrical engineers design and fabricate electronic materials such as semiconductors, conductors and superconductors used in the manufacture of electronic devices. As a natural progression, electrical engineers design and fabricate electronic devices such as transistors, which control or modulate the flow of energy; sensors of light, mechanical force, chemicals, etc.; electromagnetic radiation sources such as lasers, light emitting diodes and microwave power sources. Following this progression, we find electrical engineers designing and fabricating integrated circuits such as microprocessors and memory elements; flat-panel displays, etc., which are found in



applications ranging from supercomputers to watches, clocks and toys. Further in this progression we find electrical engineers designing and fabricating today's and tomorrow's computers.

Computer systems and application-specific integrated circuits are the elements that enable the existence of today's communication systems, such as the Internet, satellite systems, telemedicine, wired and wireless (cellular) telephones, along with standard and high definition television. Additionally, along with sensors, microwave power sources and actuators, they permit our present and future automated manufacturing lines, air and traffic control systems, and automotive safety and traffic control through collision avoidance radar systems, antilocking brake systems, air bag actuators, automatic traffic routing and the "smart highway" of the future.

Electrical engineers play an ever increasing role in the design and building of major facets of today's and tomorrow's health care systems and medical research through the application of microelectronic instrumentation and diagnostic tools such as MRI and CAT scan systems. The field of electrical engineering truly permeates every facet of our lives and thus provides excellent employment opportunities to the general practitioner or specialist in more than 35 different subspecialties.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Apply knowledge of mathematics, science and engineering
- Design and conduct experiments, as well as to analyze and interpret data
- Design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
- Function on multidisciplinary teams
- Identify, formulate and solve engineering problems
- Gain an understanding of professional and ethical responsibility
- Communicate effectively
- Complete the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context
- Recognize the need for, and an ability to engage in, lifelong learning
- Gain knowledge of contemporary issues
- Use the techniques, skills and modern engineering tools necessary for engineering practice

## Special requirements

Program D grade policy: Students must receive a minimum grade of C in all engineering, computer science, physics, mathematics and all technical electives to graduate.

## Degree requirements for Electrical Engineering, Bachelor of Science (B.S.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3

Approved humanities/fine arts	3
Approved natural/physical sciences	3-4
Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4

#### Additional General Education requirements

CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
ECON 205	The Economics of Product Development and Markets	3
SPCH 321	Speech for Business and the Professions	3

Total Hours	31-34
-------------	-------

### Collateral requirements

MATH 200	Calculus with Analytic Geometry (satisfies approved quantitative literacy)	4
MATH 201	Calculus with Analytic Geometry	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
PHIL 201	Critical Thinking About Moral Problems (satisfies approved humanities/fine arts)	3
PHYS 207	University Physics I	5
PHYS 208	University Physics II	5
Total Hours		21

### Major requirements

EGRE 101	Introduction to Engineering	4
EGRE 206	Electric Circuits	4
EGRE 207	Electric Circuits II	4
EGRE 224	Introduction to Microelectronics	4
EGRE 245	Engineering Programming Using C	4
EGRE 246	Advanced Engineering Programming Using C++	3
EGRE 254	Digital Logic Design	4
EGRE 303	Electronic Devices	3
EGRE 309	Electromagnetic Fields	3
EGRE 335	Signals and Systems I	4
EGRE 336	Introduction to Communication Systems	3
EGRE 337	Signals and Systems II	3
EGRE 364	Microcomputer Systems	4
ENGR 402 & ENGR 403	Senior Design Studio (Seminar) and Senior Design Studio (Seminar)	2
Select one of the following capstone projects:		4
EGRE 402 & EGRE 403	Senior Design Studio I (Laboratory/ Project Time) and Senior Design Studio II (Laboratory/Project Time)	
EGRE 427	Advanced Digital Design	
EGRE 436	Advanced Microscale and Nanoscale Fabrication	

Technical electives (see list and requirements below)	21
Total Hours	74

## Open electives

Select three credits of open electives	3
--	---

## Total minimum requirement 130 credits

### Technical electives and capstone project (25 credits)

The EE program culminates in the capstone project. In order to prepare for the appropriate focus area of the capstone project, students, with the help of their academic adviser, should plan a course of study beginning in their junior year.

The 25 credit hours in the junior and senior year must be chosen from the approved lists. The following criteria must be met:

- At least 13 credit hours must be from approved electrical engineering electives (with or without lab).
- At least three credit hours must be from an approved electrical engineering elective with lab.
- At least three credit hours must be from approved electives outside electrical engineering.
- Four senior design credits must be taken in one of the following courses (prerequisites must be met):
  - EGRE 402 and EGRE 403. Students choosing this option must have a project and project adviser (any electrical or computer engineering faculty member) chosen by the first week of the EGRE 402 class.
  - EGRE 427
  - EGRE 436
- Courses not from the approved lists must be approved by the adviser and department chair.
- Courses must be technical courses at the 300-level or above.
- No more than three credit hours may come from independent study courses.
- If a student wants to apply EGRE 397 and EGRE 497 toward their technical electives, a minimum of four credit hours must be earned from either one or a combination of both.
- A maximum of eight credits of EGRE 397 or EGRE 497 or a combination thereof may be used toward technical electives.

NOTE: Some of the listed courses may have prerequisites that do not count as tech electives.

### Approved electrical engineering electives with lab

EGMN 416	Mechatronics	3
EGRE 307	Integrated Circuits	4
EGRE 334	Introduction to Microfabrication	4
EGRE 365	Digital Systems	4
EGRE 397	Vertically Integrated Projects in Electrical and Computer Engineering	1
EGRE 426	Computer Organization and Design	3
EGRE 435	Microscale and Nanoscale Fabrication	4
EGRE 454	Automatic Controls	4
EGRE 497	Vertically Integrated Project in Electrical and Computer Engineering	2
EGRE 533	VLSI Design	4
EGRE 535	Digital Signal Processing	3

### Approved electrical engineering electives without lab

EGMN 315	Process and Systems Dynamics	3
EGMN 427	Robotics	3
EGRE 310	Microwave and Photonic Engineering	3
EGRE 444	Communication Systems	3
EGRE 455	Control Systems Design	3
EGRE 471	Power System Analysis	3
EGRE 521	Advanced Semiconductor Devices	3
EGRE 522		
EGRE 525	Fundamentals of Photonics Engineering	3
EGRE 526/CMSC 506	Computer Networks and Communications	3
EGRE 531	Multicore and Multithreaded Programming	3
EGRE 533	VLSI Design	4
EGRE 553	Industrial Control Systems	3
EGRE 555	Dynamics and Multivariable Control I	3
EGRE 572	Electric Machines	3
ENGR 410	Review of Internship (Completion of internship required)	1

### Approved electives outside electrical engineering

CMSC 312	Introduction to Operating Systems	3
CMSC 355	Software Engineering: Specification and Design	3
CMSC 420	Software Engineering: Project Management	3
EGMN 309	Material Science for Engineers	3
EGMN 321	Numerical Methods	3
EGMN 350		3
EGRB 407	Physical Principles of Medical Imaging	3
EGRB 408	Advanced Biomedical Signal Processing	3
EGRB 507	Biomedical Electronics and Instrumentation	3
MATH 310	Linear Algebra	3
MATH 327		
MATH 351	Applied Abstract Algebra	3
PHYS 307	The Physics of Sound and Music	3
PHYS 320	Modern Physics	3
PHYZ 320	Modern Physics Laboratory	1

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
CHEM 101	General Chemistry	4
& CHEZ 101	and General Chemistry Laboratory I	
EGRE 101	Introduction to Engineering	4
MATH 200	Calculus with Analytic Geometry (satisfies approved quantitative literacy)	4
UNIV 111	Focused Inquiry I	3
Term Hours:		15

**Spring semester**

EGRE 245	Engineering Programming Using C	4
MATH 201	Calculus with Analytic Geometry	4
PHYS 207	University Physics I	5
UNIV 112	Focused Inquiry II	3
Term Hours:		16

**Sophomore year****Fall semester**

EGRE 206	Electric Circuits	4
EGRE 246	Advanced Engineering Programming Using C++	3
MATH 301	Differential Equations	3
PHYS 208	University Physics II	5
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		18

**Spring semester**

EGRE 207	Electric Circuits II	4
EGRE 254	Digital Logic Design	4
EGRE 335	Signals and Systems I	4
MATH 307	Multivariate Calculus	4
Term Hours:		16

**Junior year****Fall semester**

EGRE 224	Introduction to Microelectronics	4
EGRE 309	Electromagnetic Fields	3
EGRE 337	Signals and Systems II	3
EGRE 364	Microcomputer Systems	4
Technical elective		3
Term Hours:		17

**Spring semester**

ECON 205	The Economics of Product Development and Markets	3
EGRE 303	Electronic Devices	3
EGRE 336	Introduction to Communication Systems	3
Approved social/behavioral science		3
Technical electives		4
Term Hours:		16

**Senior year****Fall semester**

ENGR 402	Senior Design Studio (Seminar) (Seminar)	1
SPCH 321	Speech for Business and the Professions	3
Approved natural/physical science		3
Technical electives		9
Term Hours:		16

**Spring semester**

ENGR 403	Senior Design Studio (Seminar) (Seminar)	1
PHIL 201	Critical Thinking About Moral Problems (satisfies approved humanities/fine arts)	3
Open elective (300-level or higher)		3
Technical electives		5
Select one of the following capstone courses:		4

EGRE 402	Senior Design Studio I (Laboratory/Project Time)	4
EGRE 403	Senior Design Studio II (Laboratory/Project Time)	4
EGRE 427	Advanced Digital Design	4
EGRE 436	Advanced Microscale and Nanoscale Fabrication	4
Term Hours:		16
Total Hours:		130

## Computer engineering, minor in

The minor in computer engineering consists of completing the following courses (21-22 credits):

Select one of the following:		7
CMSC 255 & CMSC 256	Introduction to Programming and Data Structures and Object Oriented Programming	
EGRE 245 & EGRE 246	Engineering Programming Using C and Advanced Engineering Programming Using C++	
EGRE 254	Digital Logic Design	4
EGRE 364 or CMSC 311	Microcomputer Systems or Computer Organization	3-4
EGRE 365	Digital Systems	4
EGRE 426	Computer Organization and Design	3
Total Hours		21-22

All courses required for the minor must be completed with a minimum grade of C.

## Electrical engineering, minor in

The minor in electrical engineering consists of completing at least 18 credits in electrical engineering courses (EGRE courses and EGMN 315). The courses must include:

EGRE 206	Electric Circuits	4
EGRE 207	Electric Circuits II	4
Select nine upper-level credits in electrical engineering		9
Select at least one additional credit in electrical engineering		1
Total Hours		18

All courses required for the minor must be completed with a minimum grade of C.

## Department of Mechanical and Nuclear Engineering

**Gary Tepper, Ph.D.**  
Professor and chair

[mechanical-and-nuclear.egr.vcu.edu](http://mechanical-and-nuclear.egr.vcu.edu) (<http://mechanical-and-nuclear.egr.vcu.edu>)

Mechanical engineering is one of the oldest and broadest engineering disciplines. Mechanical engineers design and analyze machines of all types including automobiles, airplanes, rockets, submarines, power

generation systems, biomedical instrumentation, robots, manufacturing systems, household appliances and many, many more. In addition to well-known areas such as nuclear energy, nuclear propulsion and nuclear medicine, nuclear engineers are involved in many other applications of nuclear science and technology in fields as diverse as agriculture, industry, homeland security, forensics, environmental protection and even art. The Department of Mechanical and Nuclear Engineering provides quality graduate and undergraduate education through the following degree-granting programs:

- B.S. in Mechanical Engineering (general mechanical engineering curriculum)
- B.S. in Mechanical Engineering (nuclear engineering concentration)
- M.S. in Mechanical and Nuclear Engineering (thesis and non-thesis options)
- Ph.D. in Mechanical and Nuclear Engineering

Current areas of research within the department include but are not limited to energy conversion systems, smart materials, corrosion, medical devices, aerosol science, sensors, radiation detection and measurement, nuclear reactor design, robotics, fluid mechanics, nanotechnology and biomechanics.

- Mechanical Engineering, Bachelor of Science (B.S.) (p. 446)
- Mechanical Engineering, Bachelor of Science (B.S.) with a concentration in nuclear engineering (p. 448)
- Mechanical engineering, minor in (p. 451)

## Mechanical Engineering, Bachelor of Science (B.S.)

Mechanical engineering is one of the oldest and broadest engineering disciplines. Mechanical engineers design and analyze machines of all types, including automobiles, airplanes, rockets, submarines, power generation systems, biomedical instrumentation, robots, manufacturing systems, household appliances and many, many more.

In addition, mechanical engineers design and analyze the energy sources that provide power to machines, fluids that interact with machines and the materials from which machines are constructed. Mechanical engineers also work in cutting-edge fields such as nanotechnology, alternative energy sources and environmentally friendly "green" manufacturing processes. Another important application of mechanical engineering is in medicine, where artificial organs, surgical tools and drug-delivery systems are vital to human well-being.

Mechanical engineers are in continuous demand by virtually all industries and are also employed by state and federal governments and enjoy one of the highest starting salaries of all college majors. Mechanical engineering graduates can, if they wish, continue their studies and obtain advanced degrees in fields such as business, law, medicine and engineering.

The VCU Department of Mechanical and Nuclear Engineering is the largest in the School of Engineering and offers an accredited B.S. degree in mechanical engineering, including the option of obtaining a major concentration nuclear engineering.

As part of the B.S. degree in mechanical engineering, all students complete an approved internship or cooperative education experience.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Apply knowledge of mathematics, science and engineering
- Design and conduct experiments, as well as to analyze and interpret data
- Design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
- Function on multidisciplinary teams
- Identify, formulate and solve engineering problems
- Gain an understanding of professional and ethical responsibility
- Communicate effectively
- Complete the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context
- Recognize the need for, and an ability to engage in, lifelong learning
- Gain knowledge of contemporary issues
- Use the techniques, skills and modern engineering tools necessary for engineering practice

## Special requirements

Students must earn a minimum grade of C in all required engineering courses; in all courses used to satisfy technical elective requirements; and in the following:

MATH 200	Calculus with Analytic Geometry	4
MATH 201	Calculus with Analytic Geometry	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
PHYS 207	University Physics I	5

Students must maintain a minimum major GPA of 2.0.

## Degree requirements for Mechanical Engineering, Bachelor of Science (B.S.)

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
MATH 201	Calculus with Analytic Geometry	4

MGMT 310	Managing People in Organizations	3
Total Hours		11

### Collateral requirements

ECON 205	The Economics of Product Development and Markets	3
MATH 200	Calculus with Analytic Geometry (satisfies quantitative literacy)	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
PHIL 201	Critical Thinking About Moral Problems (satisfies humanities/fine arts)	3
PHYS 207	University Physics I	5
PHYS 208	University Physics II	5
STAT 441	Applied Statistics for Engineers and Scientists	3
Total Hours		23

### Major requirements

EGMN 102	Engineering Statics	3
EGMN 103	Mechanical and Nuclear Engineering Practicum I	1
EGMN 190	Introduction to Mechanical and Nuclear Engineering	1
EGMN 201	Dynamics and Kinematics	3
EGMN 202	Mechanics of Deformables	3
EGMN 203	Mechanical and Nuclear Engineering Practicum II	1
EGMN 204	Thermodynamics	3
EGMN 215	Engineering Visualization and Computation	3
EGMN 300	Mechanical Systems Design	3
EGMN 301	Fluid Mechanics	3
EGMN 302	Heat Transfer	3
EGMN 303	Thermal Systems Design	3
EGMN 309	Material Science for Engineers	3
EGMN 311	Solid Mechanics Lab	1.5
EGMN 312	Thermal Sciences Lab	1.5
EGMN 315	Process and Systems Dynamics	3
EGMN 321	Numerical Methods	3
EGMN 402	Senior Design Studio (Laboratory/Project Time)	2
EGMN 403	Senior Design Studio (Laboratory/Project Time)	2
EGMN 416	Mechatronics	3
EGMN 420	CAE Design	3
EGMN 421	CAE Analysis	3
EGRE 206	Electric Circuits	4
ENGR 395	Professional Development	1
ENGR 402	Senior Design Studio (Seminar)	1
ENGR 403	Senior Design Studio (Seminar)	1
Approved internship or cooperative education experience		0

ENGR 296	Part-time Internship Experience	
or ENGR 396	Internship Experience	
or ENGR 398	Cooperative Education Experience	
Review of internship or cooperative education experience		0
ENGR 496	Internship Review	
or ENGR 498	Review of Cooperative Education Experience	
Technical electives		12
Total Hours		74

### Total minimum requirement 130 credits

#### Technical electives

Technical electives are satisfied by completing courses that meet all four of the following criteria:

1. School of Engineering course (CLSE, CMSC, EGMN, EGRB, EGRE, ENGR)
2. Not otherwise required for the major by the effective bulletin
3. 300-level or greater
4. 3 or more credit hours

INNO 460 can be used to satisfy a technical elective requirement.

One course from the following list can be used to satisfy a technical elective requirement:

FIRE 311	Financial Management	3
FIRE 520	Financial Concepts of Management	3
INFO 360	Business Information Systems	3
PHYS 320	Modern Physics	3

Other courses may be used to satisfy technical elective requirements with prior written approval from the department chair.

All courses used to satisfy technical elective requirements must be completed with a minimum grade of C.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester			Hours
CHEM 101	General Chemistry		4
& CHEZ 101	and General Chemistry Laboratory I		
EGMN 103	Mechanical and Nuclear Engineering Practicum I		1
EGMN 190	Introduction to Mechanical and Nuclear Engineering		1
MATH 200	Calculus with Analytic Geometry (satisfies quantitative literacy)		4
UNIV 111	Focused Inquiry I		3
Approved social/behavioral sciences			3
Term Hours:			16

#### Spring semester

EGMN 203	Mechanical and Nuclear Engineering Practicum II		1
EGMN 215	Engineering Visualization and Computation		3
MATH 201	Calculus with Analytic Geometry		4



PHYS 207	University Physics I	5
UNIV 112	Focused Inquiry II	3
Term Hours:		16

**Sophomore year****Fall semester**

EGMN 102	Engineering Statics	3
EGMN 309	Material Science for Engineers	3
ENGR 395	Professional Development	1
MATH 301	Differential Equations	3
PHYS 208	University Physics II	5
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		18

**Spring semester**

EGMN 201	Dynamics and Kinematics	3
EGMN 202	Mechanics of Deformables	3
EGMN 204	Thermodynamics	3
EGRE 206	Electric Circuits	4
MATH 307	Multivariate Calculus	4
Term Hours:		17

**Junior year****Fall semester**

EGMN 300	Mechanical Systems Design	3
EGMN 301	Fluid Mechanics	3
EGMN 311	Solid Mechanics Lab	1.5
EGMN 321	Numerical Methods	3
EGMN 420	CAE Design	3
STAT 441	Applied Statistics for Engineers and Scientists	3
Term Hours:		16.5

**Spring semester**

ECON 205	The Economics of Product Development and Markets	3
EGMN 303	Thermal Systems Design	3
EGMN 312	Thermal Sciences Lab	1.5
EGMN 421	CAE Analysis	3
EGMN 302	Heat Transfer	3
EGMN 315	Process and Systems Dynamics	3
Term Hours:		16.5

**Summer semester**

ENGR 396	Internship Experience	0
Term Hours:		0

**Senior year****Fall semester**

EGMN 402	Senior Design Studio (Laboratory/Project Time)	2
EGMN 416	Mechatronics	3
ENGR 402	Senior Design Studio (Seminar) (Seminar)	1
ENGR 496	Internship Review	0
PHIL 201	Critical Thinking About Moral Problems (satisfies humanities/fine arts)	3
Technical electives		6
Term Hours:		15

**Spring semester**

EGMN 403	Senior Design Studio (Laboratory/Project Time)	2
ENGR 403	Senior Design Studio (Seminar) (Seminar)	1
MGMT 310	Managing People in Organizations	3
Approved natural/physical sciences		3
Technical electives		6
Term Hours:		15
Total Hours:		130

## Mechanical Engineering, Bachelor of Science (B.S.) with a concentration in nuclear engineering

Mechanical engineering is one of the oldest and broadest engineering disciplines. Mechanical engineers design and analyze machines of all types, including automobiles, airplanes, rockets, submarines, power generation systems, biomedical instrumentation, robots, manufacturing systems, household appliances and many, many more.

In addition, mechanical engineers design and analyze the energy sources that provide power to machines, fluids that interact with machines and the materials from which machines are constructed. Mechanical engineers also work in cutting-edge fields such as nanotechnology, alternative energy sources and environmentally friendly "green" manufacturing processes. Another important application of mechanical engineering is in medicine, where artificial organs, surgical tools and drug-delivery systems are vital to human well-being.

Mechanical engineers are in continuous demand by virtually all industries and are also employed by state and federal governments and enjoy one of the highest starting salaries of all college majors. Mechanical engineering graduates can, if they wish, continue their studies and obtain advanced degrees in fields such as business, law, medicine and engineering.

The VCU Department of Mechanical and Nuclear Engineering is the largest in the School of Engineering and offers an accredited B.S. degree in mechanical engineering, including the option of obtaining a major concentration nuclear engineering. The curriculum for the freshman year is the same with or without the nuclear concentration. Entry into the nuclear engineering concentration requires departmental approval via the change of major process. Most students will complete the change of major process as they begin taking nuclear engineering courses in their sophomore year.

As part of the B.S. degree in mechanical engineering, all students complete an approved internship or cooperative education experience.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Apply knowledge of mathematics, science and engineering
- Design and conduct experiments, as well as to analyze and interpret data
- Design a system, component or process to meet desired needs within realistic constraints such as economic, environmental,

social, political, ethical, health and safety, manufacturability and sustainability

- d. Function on multidisciplinary teams
- e. Identify, formulate and solve engineering problems
- f. Gain an understanding of professional and ethical responsibility
- g. Communicate effectively
- h. Complete the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context
- i. Recognize the need for, and an ability to engage in, lifelong learning
- j. Gain knowledge of contemporary issues
- k. Use the techniques, skills and modern engineering tools necessary for engineering practice

## Special requirements

Students must earn a minimum grade of C in all required engineering courses; in all courses used to satisfy technical elective requirements; and in the following:

MATH 200	Calculus with Analytic Geometry	4
MATH 201	Calculus with Analytic Geometry	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4
PHYS 207	University Physics I	5

Students must maintain a minimum major GPA of 2.0.

## Degree requirements for Mechanical Engineering, Bachelor of Science (B.S.) with a concentration in nuclear engineering

### General Education requirements

#### University Core Education Curriculum

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

CHEM 101	General Chemistry	4
& CHEZ 101	and General Chemistry Laboratory I	
MATH 201	Calculus with Analytic Geometry	4
MGMT 310	Managing People in Organizations	3
Total Hours		11

### Collateral requirements

MATH 200	Calculus with Analytic Geometry (satisfies quantitative literacy)	4
MATH 301	Differential Equations	3
MATH 307	Multivariate Calculus	4

PHIL 201	Critical Thinking About Moral Problems (satisfies humanities/fine arts)	3
PHYS 207	University Physics I	5
PHYS 208	University Physics II	5
Total Hours		17

### Major requirements

EGMN 102	Engineering Statics	3
EGMN 103	Mechanical and Nuclear Engineering Practicum I	1
EGMN 190	Introduction to Mechanical and Nuclear Engineering	1
EGMN 201	Dynamics and Kinematics	3
EGMN 202	Mechanics of Deformables	3
EGMN 203	Mechanical and Nuclear Engineering Practicum II	1
EGMN 204	Thermodynamics	3
EGMN 215	Engineering Visualization and Computation	3
EGMN 300	Mechanical Systems Design	3
EGMN 301	Fluid Mechanics	3
EGMN 302	Heat Transfer	3
EGMN 303	Thermal Systems Design	3
EGMN 309	Material Science for Engineers	3
EGMN 311	Solid Mechanics Lab	1.5
EGMN 312	Thermal Sciences Lab	1.5
EGMN 315	Process and Systems Dynamics	3
EGMN 321	Numerical Methods	3
EGMN 351	Nuclear Engineering Fundamentals	3
EGMN 352	Nuclear Reactor Theory	3
EGMN 355	Radiation Safety and Shielding	3
EGMN 402	Senior Design Studio (Laboratory/Project Time)	2
EGMN 403	Senior Design Studio (Laboratory/Project Time)	2
EGMN 420	CAE Design	3
EGMN 453	Economics of Nuclear Power Production	3
EGMN 455	Nuclear Power Plants	3
EGMN 456	Reactor Design and Systems	3
EGRE 206	Electric Circuits	4
ENGR 395	Professional Development	1
ENGR 402	Senior Design Studio (Seminar)	1
ENGR 403	Senior Design Studio (Seminar) (Seminar)	1
Approved internship or cooperative education experience		0
ENGR 296	Part-time Internship Experience	
or ENGR 396	Internship Experience	
or ENGR 398	Cooperative Education Experience	
Review of internship or cooperative education experience		0
ENGR 496	Internship Review	0
or ENGR 498	Review of Cooperative Education Experience	

Nuclear engineering electives	6
Total Hours	80

## Total minimum requirement 130 credits

### Nuclear engineering electives

Mechanical engineering students completing the nuclear engineering concentration will choose two nuclear engineering elective courses from the following list. A special topic, independent study or other course may be used as a nuclear engineering elective with prior written approval of the department chair.

EGMN 356	Nuclear Instrumentation and Measurements	3
EGMN 450	Nuclear Reactor Control and Dynamics	3
EGMN 451	Nuclear Safety and Security	3
EGMN 510	Probabilistic Risk Assessment	3
EGMN 530	System Analysis of the Nuclear Fuel Cycle	3
EGMN 545	Energy Conversion Systems	3

All courses used to satisfy nuclear engineering elective requirements must be completed with a minimum grade of C.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester			Hours
CHEM 101	General Chemistry		4
& CHEZ 101	and General Chemistry Laboratory I		
EGMN 103	Mechanical and Nuclear Engineering Practicum I	1	
EGMN 190	Introduction to Mechanical and Nuclear Engineering	1	
MATH 200	Calculus with Analytic Geometry (satisfies quantitative literacy)	4	
UNIV 111	Focused Inquiry I	3	
Approved social/behavioral sciences			3
Term Hours:			16

### Spring semester

EGMN	203	Mechanical and Nuclear Engineering Practicum II	1
EGMN	215	Engineering Visualization and Computation	3
MATH	201	Calculus with Analytic Geometry	4
PHYS	207	University Physics I	5
UNIV	112	Focused Inquiry II	3
Term Hours:			16

### Sophomore year

Fall semester			
EGMN 102	Engineering Statics	3	
EGMN 351	Nuclear Engineering Fundamentals	3	
ENGR 395	Professional Development	1	
MATH 301	Differential Equations	3	
PHYS 208	University Physics II	5	

UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		18

### Spring semester

EGMN 201	Dynamics and Kinematics	3
EGMN 202	Mechanics of Deformables	3
EGMN 204	Thermodynamics	3
EGMN 352	Nuclear Reactor Theory	3
MATH 307	Multivariate Calculus	4
Term Hours:		16

### Junior year

#### Fall semester

EGMN 300	Mechanical Systems Design	3
EGMN 301	Fluid Mechanics	3
EGMN 311	Solid Mechanics Lab	1.5
EGMN 321	Numerical Methods	3
EGMN 355	Radiation Safety and Shielding	3
EGMN 420	CAE Design	3
Term Hours:		16.5

#### Spring semester

EGMN 302	Heat Transfer	3
EGMN 303	Thermal Systems Design	3
EGMN 312	Thermal Sciences Lab	1.5
EGMN 455	Nuclear Power Plants	3
EGRE 206	Electric Circuits	4
Nuclear engineering elective		3
Term Hours:		17.5

### Summer semester

ENGR 396	Internship Experience	0
Term Hours:		0

### Senior year

#### Fall semester

EGMN 309	Material Science for Engineers	3
EGMN 402	Senior Design Studio (Laboratory/Project Time)	2
EGMN 453	Economics of Nuclear Power Production	3
EGMN 456	Reactor Design and Systems	3
ENGR 402	Senior Design Studio (Seminar) (Seminar)	1
ENGR 496	Internship Review	0
PHIL 201	Critical Thinking About Moral Problems (satisfies humanities/fine arts)	3
Term Hours:		15

#### Spring semester

EGMN 315	Process and Systems Dynamics	3
EGMN 403	Senior Design Studio (Laboratory/Project Time)	2
ENGR 403	Senior Design Studio (Seminar) (Seminar)	1
MGMT 310	Managing People in Organizations	3
Approved natural/physical sciences		3
Nuclear engineering elective		3
Term Hours:		15

Total Hours: 130

## Mechanical engineering, minor in

The minor in mechanical engineering consists of 21 credits and successful completion of the following courses:

EGMN 102	Engineering Statics	3
EGMN 201	Dynamics and Kinematics	3
EGMN 202	Mechanics of Deformables	3
EGMN 204	Thermodynamics	3
EGMN 300	Mechanical Systems Design	3
EGMN 301	Fluid Mechanics	3
EGMN 302	Heat Transfer	3
Total Hours		21

A maximum of nine credits of comparable course work may be substituted with approval of the chair of the mechanical engineering department.

# L. DOUGLAS WILDER SCHOOL OF GOVERNMENT AND PUBLIC AFFAIRS

The L. Douglas Wilder School of Government and Public Affairs is a creative, interdisciplinary grouping of programs in the social sciences and professional arenas that provides students with the knowledge, skills and experience necessary for success in public service.

The Wilder School brings together faculty from multiple disciplines that share a common interest in public affairs. The faculty includes individuals with strong research and analytical skills and with substantive expertise in such fields as criminal justice, economics, homeland security, public administration, urban planning and community development. These faculty members are committed to producing cutting-edge research and public service that can bridge the gap between theory and practice and to providing high quality, innovative and nationally competitive degree programs for our students.

To achieve this mission, the Wilder School actively fosters and promotes a wide range of endeavors, including the establishment of interdisciplinary undergraduate and graduate programs that develop close ties with other related university programs. The Wilder School is an intellectually exciting place committed to having a genuine impact on public policy and providing an intellectually stimulating education for future public affairs professionals who share in our commitment.

## Administration

923 West Franklin Street  
P.O. Box 842028  
Richmond, Virginia 23284-2028  
Phone: (804) 828-2292  
Fax: (804) 827-1275  
wilder.vcu.edu (<http://www.wilder.vcu.edu>)

**John Accordino, Ph.D.**  
Professor and interim dean

**Jill Gordon, Ph.D.**  
Associate professor and associate dean of faculty and academic affairs

**John S. Mahoney, Ph.D.**  
Associate professor and assistant dean for undergraduate academic affairs

**Simon Okoth, Ph.D.**  
Assistant professor and director of graduate studies

**Sarah Jane Brubaker, Ph.D.**  
Associate professor and director of Ph.D. program

**Richard F. Huff, Ph.D.**  
Assistant professor and program chair, M.P.A. program

**Jay S. Albanese, Ph.D.**  
Professor and program chair, criminal justice program

**William V. Pelfrey, Ph.D.**  
Associate professor and program chair, homeland security and emergency preparedness program

**Meghan Z. Gough, Ph.D.**  
Associate professor and program chair, urban and regional studies program

## Accreditation

### Public administration (master's degree)

National Association of Schools of Public Affairs and Administration

### Urban and regional planning (master's degree)

Planning Accreditation Board

## Program offerings

The school offers a variety of educational opportunities. Students may pursue three undergraduate programs and an additional three minors. Graduate programs provide options for full-time students and for practicing professionals interested in enhancing their skills or engaging in graduate-level work on a part-time basis. Current graduate offerings include nationally recognized master's programs and 10 graduate-level certificates, as well as a doctoral degree program administered by the Center for Public Policy. Wilder School programs include:

## Baccalaureate degrees

Bachelor of Science in Criminal Justice  
Bachelor of Arts in Homeland Security and Emergency Preparedness  
Bachelor of Science in Urban and Regional Studies

## Minors

Criminal justice  
Homeland security and emergency preparedness  
Urban and regional studies

## Post-baccalaureate graduate certificates

Certificate in Criminal Justice  
Certificate in Geographic Information Systems  
Certificate in Historic Preservation Planning  
Certificate in Homeland Security and Emergency Preparedness  
Certificate in Nonprofit Management  
Certificate in Planning Information Systems  
Certificate in Public Management  
Certificate in Public Safety  
Certificate in Transportation Planning and Analytics  
Certificate in Urban Revitalization

## Master's degrees

Master of Arts in Homeland Security and Emergency Preparedness  
Master of Public Administration  
Master of Science in Criminal Justice  
Master of Urban and Regional Planning

## Doctoral degree

Ph.D. in Public Policy and Administration (through the Center for Public Policy)

The school also offers two dual degree programs with the University of Richmond's T.C. Williams Law School. Through these programs students can simultaneously obtain a law degree (J.D.) and either the Master of Public Administration or the Master of Urban and Regional Planning.



## Service-learning and internship opportunities

**Shajuana Isom-Payne**

Director of student success

The educational experience at the L. Douglas Wilder School of Government and Public Affairs extends far beyond the classroom. Many students take advantage of service-learning (<http://www.wilder.vcu.edu/service/servicelearning>) and internship (<http://www.wilder.vcu.edu/service/intern>) opportunities, gaining valuable work experience and enhancing their resumes as they contribute in meaningful ways to governmental departments and agencies, legislative offices, nonprofit institutions, community initiatives, and businesses throughout Richmond.

Exceptionally qualified graduate students in the criminal justice, homeland security and emergency preparedness, sociology, public administration, and urban and regional planning programs are selected to be Wilder Graduate Scholars (<http://www.wilder.vcu.edu/service/scholars>) who undertake yearlong placements in which they benefit from professional work experience and financial support.

At the Wilder School, service is a tradition that is supported and cultivated by a faculty that reflects a tremendous commitment to community-based research. Each semester, VCU faculty offer a diverse selection of credit-bearing service-learning courses that provide students with the privilege of developing hands-on experience within their academic fields while engaging in meaningful projects that benefit local communities.

Guidelines for internships are available on the Wilder School website at [wilder.vcu.edu/service/intern/guidelines.html](http://wilder.vcu.edu/service/intern/guidelines.html) (<http://www.wilder.vcu.edu/service/intern/guidelines.html>).

## Undergraduate information

### General education requirements

To complete the general education requirements for the L. Douglas Wilder School of Government and Public Affairs, students must complete the general education requirements for undergraduate study for the College of Humanities and Sciences (p. 68).

### Virginia Capital Semester

**Shajuana Isom-Payne**

Director of student success

923 West Franklin Street

P.O. Box 842028

Richmond, Virginia 23284-2028

Phone: (804) 827-2417

Fax: (804) 827-1275

[wilder.vcu.edu/service/capsem](http://wilder.vcu.edu/service/capsem) (<http://wilder.vcu.edu/service/capsem>)

Virginia Capital Semester offers qualified students from VCU and other universities the opportunity to experience an internship in the state government while continuing their studies on a full-time basis through course work at VCU. Internships are arranged with the legislative and executive branches of Virginia government, and with the advocacy and lobbying organizations associated with the state government. The program is offered in the spring semester and begins the first week

of January, corresponding with the calendar of the Virginia General Assembly.

The select group of students participating in the program will assemble weekly in a policy-making seminar, GVPA 423, to hear from key leaders at the Capitol and to compare experiences from their various internship placements. Students will receive three credits for the seminar, and three credits and a \$1,000 stipend for GVPA 494, the internship. Both courses are required of all students in the Virginia Capital Semester. Additional related courses taken from the VCU curriculum are recommended. Given the demands of the internship, however, students should not exceed a total of 15 credit hours during the Virginia Capital Semester. The program is designed for full-time students, but if space is available, students who do not wish to take a full course load may be allowed to enroll in the internship and policy-making seminar for six credits.

The program is open to all undergraduate students from accredited colleges and universities, both public and private, including those from colleges and universities in other states. Virginia Capital Semester also is open to graduate students on a case-by-case basis. Acceptance into the program is competitive. Program participants are selected by a committee comprised of faculty members and state officials, with preference given to full-time students who will have advanced sophomore, junior or senior standing at the time of enrollment in the program. Contact information, application procedures and deadlines are available on the Virginia Capital Semester website (<http://wilder.vcu.edu/service/capsem>).

### Criminal Justice Scholars

**Kristine Artello, J.D., Ph.D., M.S.S.A.**

Assistant professor

Undergraduate criminal justice majors who are planning to attend a graduate or professional school are encouraged to participate in the Criminal Justice Scholars program. This is an opportunity to work closely with a criminal justice faculty member to complete a research project and present the results to the faculty with the additional potential to write a journal article. To be considered, a student must have obtained junior status. Transfer students must be juniors and must have completed at least 18 hours of undergraduate work at VCU. All applicants must have a minimum cumulative GPA of 3.25 or a minimum 3.5 in the major and must have earned a minimum grade of B in both CRJS 380 and STAT 210.

Applicants must meet with the Criminal Justice Scholars program coordinator prior to applying to the program to verify eligibility and discuss project ideas. Students should submit an application to the program coordinator by March 1 (for fall consideration) or Sept. 15 (for spring consideration). Once approved, students may enroll in CRJS 492 or GVPA 495 to facilitate the project.

The application, approximately two- to three-pages long, should include:

- A well-defined topic
- A clearly stated research question (or questions)
- A plan for obtaining relevant data in a timely manner (either through original data collection or an existing data set)
- A bibliography of at least 15 relevant academic sources
- A realistic timeline for completion of all tasks
- A list of criminal justice faculty members with whom the student wishes to work

Applications will be evaluated by a faculty committee based upon the criteria listed above. Acceptance into the Criminal Justice Scholars Program is contingent upon a faculty member's agreement to supervise the project and his or her assessment of the project's feasibility.

Upon successful completion of the project, students will have "Criminal Justice Scholar" placed on their transcripts in recognition of their efforts and outstanding work.

## Wilder School Scholars

**John Mahoney, Ph.D.**

Assistant dean for undergraduate academic affairs

Students in any Wilder School undergraduate major may apply for Wilder School Scholar status upon completion of their freshman year. Students must have a minimum 3.5 cumulative GPA or a 3.75 GPA in their major to be eligible to become Wilder School Scholars. Students must maintain this average in order to continue their Wilder School Scholar status. Transfer students must meet these same requirements after a minimum of one semester of VCU course work.

In order to graduate as Wilder School Scholars, students must:

- Maintain the GPA cited above
- Complete GVPA 499, a three-credit Wilder School Scholars capstone course or an honors thesis through the Wilder School Undergraduate Research Opportunities Program
- Complete at least 15 additional credits in Wilder School honors courses/variants/modules, with at least three of those credits completed each academic year, and at least three of those credits in an honors course outside the student's major (but within the Wilder School)
- Attend at least three Wilder School events or seminars per academic year

The Wilder School offers an array of honors courses each semester. With the exception of GVPA 499, which is limited in enrollment to Wilder School students, these courses are open to students from all majors, since they are offered in conjunctions with the Honors College. Wilder School honors course offerings will include:

- At least once per year, GVPA 499. The exact structure and content varies from year to year. The course will focus on a topic of broad interest to all Wilder School students and disciplines (violence, equity, justice, etc.)
- At least two three-credit honors courses each year
- At least two honors sections of existing courses each year (generally these are sections of large, introductory-level courses)
- At least two honors variants in selected courses each year in which a student may receive honors credit while enrolled in a non-honors course by fulfilling additional requirements, including: more advanced readings; extra meetings with the professor and other honors students enrolled in the course; group projects with other honors variant students; or other activities as deemed appropriate by the instructor. These honors variants are distinguished by a separate section number and a title indicating honors status. Limits may be placed on the number of honors variant students in any single course.
- At least four 1.5-credit honors modules each year

The Wilder School Scholars program is explicitly linked to the VCU Honors College. Students within the Wilder School may graduate with any one, or all, of three distinct levels of honors: honors in their

individual majors (where available), Wilder School Scholar honors and University Honors. Students who graduate as Wilder School Scholars are designated as such at their graduation ceremonies, with a separate certificate, sash and other forms of recognition.

Students who wish to enter the Wilder School Scholars program or who seek additional information should contact the Wilder School Scholars director. Honors courses for each semester are listed in each semester in the Schedule of Classes.

## Undergraduate Research Opportunities Program (UROP)

**Blythe A. Bowman, Ph.D.**

Associate professor

The Undergraduate Research Opportunities Program cultivates and supports research partnerships between Wilder School undergraduates and faculty. The UROP offers students the chance to work on cutting-edge research, whether they join established research projects or pursue their own ideas. As UROP participants, undergraduates are involved in each phase of standard research activity: developing research plans, writing proposals, conducting research, analyzing data and presenting research results in oral and written form. UROP projects take place during the academic year, as well as over the summer, and research can be done in any of the Wilder School's academic programs. Projects can last for an entire semester or may continue for a year or more. For their projects UROP students receive academic credit or pay, or work on a voluntary basis. The UROP experience enables students to become familiar with the faculty, learn about potential majors and investigate areas of interest. UROP participants gain practical skills and knowledge they eventually apply to careers after graduation or as graduate students. Most importantly, they become involved in exciting research.

Essential to all UROP projects are the following:

- Research work worthy of academic credit, regardless of whether or not credit is requested
- Active communication between the UROP participant and a faculty supervisor, who is responsible for guiding the intellectual course of the student's work
- A research proposal: a student-authored statement of purpose that describes the planned research
- Students completing a UROP experience are strongly encouraged to present their work through oral presentation, poster or video
- Students may enroll in GVPA 495, a three-credit course, which can be counted one time toward any of the Wilder School's undergraduate majors. (Students can take a total of six GVPA 495 credits during their undergraduate careers, but only three of those credits can count toward their major fields. Any additional GVPA 495 credits will count as upper-level electives.)
- Each semester/year, the Wilder School will provide several grants of up to \$400 each to support UROP projects

## Eligibility and procedures

Students in any undergraduate major in the Wilder School who have a minimum cumulative overall GPA of 3.25, or a 3.5 GPA in their major, are eligible to participate in the UROP. Students also must have completed the UNIV 200 and research methods courses, with a minimum grade of B in each course in order to be eligible to participate in the program. As a rule, freshmen are not eligible for the program, and it is strongly recommended that sophomores wait until their junior or senior year

to apply for a UROP experience. Each year, however, a small number of incoming freshmen with outstanding potential may be identified as eligible for early participation in the UROP; the GPA requirement and course prerequisites are waived for these freshman participants.

Students wishing to enter the UROP or seeking additional information should contact the Wilder School UROP director.

## Criminal Justice, Bachelor of Science (B.S.) with a concentration in forensic crime scene investigation

Jay S. Albanese, Ph.D.

Professor and program chair

The major objective of this degree program is to prepare students for effective professional careers in criminal justice, forensic crime scene investigation, public service and other helping professions, and/or prepare them to pursue studies in law and other related graduate programs. Career opportunities are available in federal, state, local and private justice-related endeavors. These careers include law enforcement, crime scene investigation, juvenile justice, corrections and the courts.

This program also prepares students to enter law school or to pursue graduate studies in criminal justice or in several of the human services fields, usually related to justice. This program offers and encourages in-service justice employees and others to enhance their professional career development through higher education.

Students majoring in criminal justice receive a broad educational background, professionally oriented courses in their special area of interest and various skill courses designed to enhance their career opportunities. Through core courses and electives in the major, students have the opportunity to orient their course work to fit their educational objectives and career plans.

It is essential that students seek and follow the advice of an adviser in the progression of the core courses, the selection of criminal justice electives and in the identification of complementary courses in other disciplines that can benefit the student and assist in the accomplishment of career goals. Whether the student is interested in general criminal justice, policing, crime scene investigation, legal studies, juvenile justice or corrections, faculty and advisers can assist in identifying the appropriate curriculum.

This concentration is offered for those students who are interested in careers in crime scene investigation at the local, state or federal levels.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Identify concepts and issues that are relevant and/or appropriate (research/content)
- Demonstrate logical connections in concepts, facts and information identified in the literature
- Gather and synthesize knowledge pertaining to a criminal justice or criminological issue

## Special requirements

The Bachelor of Science in Criminal Justice requires a minimum of 120 credits, including 39 credits in criminal justice courses, a minimum of 75 credits in courses outside of VCU-offered criminal justice courses, and a minimum cumulative and major GPA of a 2.0. No more than half of the criminal justice courses applied to the major can be transferred from another college. Students must earn a total of 45 credits in classes at the 300-level and above, including upper-level criminal justice course work. The criminal justice curriculum includes the core and concentration requirements.

## Degree requirements for Criminal Justice, Bachelor of Science (B.S.) with a concentration in forensic crime scene investigation

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Select six to eight credits of approved H&S general education electives		6-8
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Experiential fine arts (course offered by the School of the Arts)		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

## Collateral requirements

STAT 210	Basic Practice of Statistics (fulfills quantitative literacy)	3
----------	---	---

## Major requirements

### Core requirements

CRJS 181	Introduction to Criminal Justice	3
CRJS 253	Introduction to Corrections	3
CRJS 254	Introduction to Policing	3
CRJS 355	Criminological Theory	3
CRJS 380	Research Methods in Criminal Justice	3
CRJS 475	Criminal Procedure	3

CRJS 480	Senior Seminar	3
<b>Concentration requirements</b>		
CRJS 320	Principles of Criminal Investigation	3
CRJS 370	Criminalistics and Crime Analysis	3
CRJS 373	Crime Scene Evidence: Law and Trial Procedure	3
CRJS 425	Violent Crime Scene Investigation	3
CRJS electives (must be upper-level) <sup>1</sup>		6
Total Hours		39

<sup>1</sup> May include six credits selected from HSEP 301, HSEP 302, HSEP 320 and HSEP 330

## Open electives

Select 35-49 open elective credits 35-49

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
CRJS 181	Introduction to Criminal Justice	3
STAT 210	Basic Practice of Statistics (fulfills quantitative literacy)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved H&S diverse and global communities		3
Open elective		3
Term Hours:		16

### Spring semester

CRJS 253	Introduction to Corrections	3
CRJS 254	Introduction to Policing	3
HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Approved H&S general education elective		3-4
Approved H&S human, social and political behavior		3-4
Term Hours:		16-18

### Sophomore year

Fall semester		Hours
CRJS 355	Criminological Theory	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved H&S general education elective		3-4
Approved H&S literature and civilization		3
Foreign language (101-level)		4
Term Hours:		16-17

### Spring semester

CRJS 320	Principles of Criminal Investigation	3
Approved H&S science and technology		3-4
Experiential fine arts		1-3
Foreign language (102-level)		4
Open elective		3
Term Hours:		14-17

### Junior year

#### Fall semester

CRJS 370	Criminalistics and Crime Analysis	3
CRJS 380	Research Methods in Criminal Justice	3
Open electives		9
Term Hours:		15

#### Spring semester

CRJS 373	Crime Scene Evidence: Law and Trial Procedure	3
CRJS elective (must be upper-level)		3
Open electives		9
Term Hours:		15

### Senior year

#### Fall semester

CRJS 425	Violent Crime Scene Investigation	3
CRJS 475	Criminal Procedure	3
Open electives		9
Term Hours:		15

#### Spring semester

CRJS 480	Senior Seminar	3
CRJS elective (must be upper-level)		3
Open electives		7-9
Term Hours:		13-15
Total Hours:		120-128

## Criminal Justice, Bachelor of Science (B.S.) with a concentration in justice

Jay S. Albanese, Ph.D.

Professor and program chair

The major objective of this degree program is to prepare students for effective professional careers in criminal justice, forensic crime scene investigation, public service and other helping professions, and/or prepare them to pursue studies in law and other related graduate programs. Career opportunities are available in federal, state, local and private justice-related endeavors. These careers include law enforcement, crime scene investigation, juvenile justice, corrections and the courts.

This program also prepares students to enter law school or to pursue graduate studies in criminal justice or in several of the human services fields, usually related to justice. This program offers and encourages in-service justice employees and others to enhance their professional career development through higher education.

Students majoring in criminal justice receive a broad educational background, professionally oriented courses in their special area of interest and various skill courses designed to enhance their career opportunities. Through core courses and electives in the major, students have the opportunity to orient their course work to fit their educational objectives and career plans.

It is essential that students seek and follow the advice of an adviser in the progression of the core courses, the selection of criminal justice electives and in the identification of complementary courses in other disciplines that can benefit the student and assist in the accomplishment of career goals. Whether the student is interested in general criminal justice, policing, crime scene investigation, legal studies, juvenile

justice or corrections, faculty and advisers can assist in identifying the appropriate curriculum.

The justice concentration is offered for those students who are interested in a broad theoretical and practical education in the field of criminal justice.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Identify concepts and issues that are relevant and/or appropriate (research/content)
- Demonstrate logical connections in concepts, facts and information identified in the literature
- Gather and synthesize knowledge pertaining to a criminal justice or criminological issue

## Special requirements

The Bachelor of Science in Criminal Justice requires a minimum of 120 credits, including 39 credits in criminal justice courses a minimum of 75 credits in courses outside of VCU-offered criminal justice, and a minimum cumulative and major area GPA of a 2.0. No more than half of the criminal justice courses applied to the major can be transferred from another college. Students must earn a total of 45 credits in classes at the 300-level and above, including upper-level criminal justice course work. The criminal justice curriculum includes the core and concentration requirements.

## Degree requirements for Criminal Justice, Bachelor of Science (B.S.) with a concentration in justice

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Select six to eight credits of approved H&S general education electives		6-8
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Experiential fine arts (course offered by the School of the Arts)		1-3

Foreign language through the 102 level (by course or placement)	0-8
Total Hours	11-23

## Collateral requirements

STAT 210	Basic Practice of Statistics (fulfills quantitative literacy)	3
----------	---	---

## Major requirements

### Core requirements

CRJS 181	Introduction to Criminal Justice	3
CRJS 253	Introduction to Corrections	3
CRJS 254	Introduction to Policing	3
CRJS 355	Criminological Theory	3
CRJS 380	Research Methods in Criminal Justice	3
CRJS 475	Criminal Procedure	3
CRJS 480	Senior Seminar	3
CRJS electives <sup>1</sup>		18
Total Hours		39

<sup>1</sup> May include 12 credits selected from HSEP 301, HSEP 302, HSEP 320 and HSEP 330

## Open electives

Select 35-49 open elective credits	35-49
------------------------------------	-------

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester	Hours
CRJS 181 Introduction to Criminal Justice	3
STAT 210 Basic Practice of Statistics (fulfills quantitative literacy)	3
UNIV 101 Introduction to the University	1
UNIV 111 Focused Inquiry I	3
Approved H&S diverse and global communities	3
Open elective	3
Term Hours:	16

### Spring semester

CRJS 253 Introduction to Corrections	3
CRJS 254 Introduction to Policing	3
HUMS 202 Choices in a Consumer Society	1
UNIV 112 Focused Inquiry II	3
Approved H&S general education elective	3-4
Approved H&S human, social and political behavior	3-4
Term Hours:	16-18

### Sophomore year

Fall semester	
CRJS 355 Criminological Theory	3
UNIV 200 Inquiry and the Craft of Argument	3
Approved H&S general education elective	3-4



Approved H&S literature and civilization	3
Foreign language (101-level)	4
Term Hours:	16-17
<b>Spring semester</b>	
CRJS Elective	3
Open elective	3
Approved H&S science and technology	3-4
Experiential fine arts	1-3
Foreign language (102-level)	4
Term Hours:	14-17
<b>Junior year</b>	
<b>Fall semester</b>	
CRJS 380 Research Methods in Criminal Justice	3
CRJS elective	3
Open electives	9
Term Hours:	15
<b>Spring semester</b>	
CRJS electives	6
Open electives	9
Term Hours:	15
<b>Senior year</b>	
<b>Fall semester</b>	
CRJS 375	3
CRJS elective	3
Open electives	9
Term Hours:	15
<b>Spring semester</b>	
CRJS 480 Senior Seminar	3
CRJS elective	3
Open electives	7-9
Term Hours:	13-15
Total Hours:	120-128

## Homeland Security and Emergency Preparedness, Bachelor of Arts (B.A.)

**William V. Pelfrey, Ph.D.**

Associate professor and program chair

Emergency preparedness has always been a critical aspect of governmental policy at the federal, state and local levels. Response to natural disasters — floods, hurricanes, tornadoes, earthquakes, outbreak of infectious disease — requires predisaster planning, mid-disaster operations and postdisaster reconstruction that can only be carried out successfully through a partnership between all levels of government and between the public sector, private sector and civil society. Since the Sept. 11, 2001 attacks in New York, Virginia and Pennsylvania the concept of emergency preparedness has been expanded to include the task of homeland security — protecting the U.S. from terrorist-caused disasters. Policy planners and operational responders at all levels of government who had previously focused upon natural disasters now have the added responsibility of preparing for and mitigating the effects of politically inspired terrorist violence.

The program in homeland security and emergency preparedness recognizes this dual nature and is designed to give students both

theoretical and practical knowledge that will prepare them for the following: 1) private- or public-sector employment in the expanding area of homeland security as it relates specifically to international and domestic security, as well as emergency preparedness for both security and nonsecurity-related incidents and/or 2) further study in government, international affairs, law enforcement, policy planning or law.

Students will study homeland security and emergency preparedness from a number of perspectives: emergency planning/management principles and practicalities; the nature and effects of natural disasters; the nature of the terrorist threat to the U.S. from both foreign and domestic organizations, including terrorist motives, methods and history; counterterrorism policies ranging from law enforcement to intelligence to the use of military force; vulnerability assessment of public and private infrastructure and institutions; critical infrastructure protection; ethical, constitutional, law enforcement and civil liberties issues related to the prevention of terrorist attacks through surveillance, immigration restrictions and detention; public safety legal questions that arise during governmental responses to natural disaster; intelligence analysis of domestic and international threats; and policy-making topics, such as organizational design and management, interagency processes, and intergovernmental coordination and cooperation within emergency preparedness and counterterrorism institutions at the local, state, federal and international level.

The knowledge and skills acquired through this course of study will enable students to continue their studies at law school or graduate school in a number of areas: business, criminal justice, geography, international affairs, political science, public administration, sociology and urban planning. Students also will be able to pursue employment opportunities in various fields, such as within the government at the local, state and federal level in homeland security and emergency planning/response; law enforcement; intelligence; for-profit and nonprofit research and consultancy; and private sector employment with any business that requires emergency planning expertise to protect critical infrastructure.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- **Analytical concepts and skills**

Students will achieve comprehension of the theory and practice of homeland security and emergency preparedness and be able to analyze policy and synthesize information in four key areas: risk and vulnerability analysis, strategic planning dilemmas of disasters and disaster preparedness, institutional coordination and intelligence operations, and legal/constitutional aspects, specifically:

- Concepts and methodologies for risk and vulnerability assessment of public and private infrastructure and institutions to natural disasters and terrorist attack (HSEP 310)
- Critical infrastructure protection against natural disasters and terrorist attacks (HSEP 310)
- Strategic planning within private and public sector organizations within the context of the new homeland security and emergency preparedness agendas (HSEP 311)
- Government common goods priorities and free rider problems (HSEP 311)
- Business and government continuity measures (HSEP 311)
- Intelligence analysis of domestic and international threats (HSEP 320)

- Policy making topics such as organizational design and management, interagency processes, and intergovernmental coordination and cooperation within counterterrorism and emergency management institutions at the local, state, federal, and international level (HSEP 320)
- Ethical, constitutional, law enforcement, and civil liberties issues related to prevention of terrorist attacks through surveillance, immigration restrictions, and detention (HSEP 330)
- Ethical, constitutional, law enforcement, and civil liberties issues related to arrest and prosecution of terrorist suspects (HSEP 330)
- public safety legal questions that arise during governmental responses to natural disaster (HSEP 330)
- **Homeland security and emergency preparedness**  
Students will achieve comprehension of the theoretical and practical principles of emergency preparedness for both natural disasters and terrorist incidents and be able to analyze key topics related to natural disasters, emergency planning, terrorism, and counterterrorism, specifically:
  - Emergency planning/management principles and practicalities for an all-hazard approach to emergency preparedness (HSEP 101, HSEP 302)
  - The nature and effects of natural disasters — emerging diseases, floods, hurricanes, tornadoes, for example (HSEP 101, HSEP 302)
  - The nature of the terrorist threat to the United States from both foreign and domestic organizations, including terrorist motives, methods, and history (HSEP 301)
  - Counterterrorism policies ranging from law enforcement to intelligence to the use of military force (HSEP 301)
- **Research and policy analysis**  
Students will perform research, policy analysis, and risk assessment using several methodological and theoretical approaches to homeland security and emergency preparedness, specifically:
  - Researching topics in homeland security and emergency preparedness (HSEP 301, HSEP 302, HSEP 310, HSEP 311, HSEP 320, HSEP 330, HSEP 490)
  - Preparing case studies of emergency incidents and governmental responses (HSEP 302, HSEP 310, HSEP 311, HSEP 320)
  - Preparing analyses of legal questions and cases related to homeland security and emergency preparedness (HSEP 330)
- **Knowledge of government**  
Students will demonstrate a basic knowledge of the workings of the American government and the international system, specifically:
  - The functions of American national institutions, state, and local institutions (POLI 103)
  - International institutions, the behavior of nations states, international political, social, military, and economic trends (POLI 105)
- **Oral and written presentation**  
Students will develop advanced skills in expository writing and oral presentation, specifically:
  - Completion of a large project outlining, evaluating, and illustrating the dilemmas facing emergency management officials in preparation for a to a role playing simulation (HSEP 490)
  - Writing an executive summary (HSEP 490)
  - Presenting an oral briefing (HSEP 301, HSEP 490)
- **Role-playing simulation**

Students will participate in a role playing simulation and be able to evaluate policy problems they face and develop policy responses, specifically:

- Preparation for and participation in a role playing simulation of an emergency situation (HSEP 490)

#### • **Evaluation**

Students will also be able to evaluate scholarly and practitioner analyses of homeland security and emergency preparedness, specifically:

- Written and oral evaluation of several books/reports on homeland security and emergency preparedness (HSEP 490)

## Collateral requirements

In addition to the homeland security and emergency preparedness courses required for the Bachelor of Arts degree, students must complete the study of a foreign language through the intermediate level (202 or 205) through courses or placement. As a prerequisite for HSEP 310, STAT 210 should be used to fulfill general education requirements for statistics.

## Honors in homeland security and emergency preparedness

Homeland security and emergency preparedness majors can earn honors within the program by completing HSEP 490 with an A grade and graduating with an overall 3.0 GPA and a 3.3 GPA in courses credited toward the 36 credits of the homeland security and emergency preparedness major.

## Special requirements

Students must earn a total of 45 credits in classes at the 300-level and above, including upper-level criminal justice course work. To graduate from the homeland security and emergency preparedness program, students must have a cumulative and major GPA of 2.0. The homeland security and emergency preparedness curriculum includes the core and major elective requirements.

## Degree requirements for Homeland Security and Emergency Preparedness, Bachelor of Arts (B.A.)

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Select six to eight credits of approved H&S general education electives		6-8

Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)	
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Experiential fine arts (course offered by the School of the Arts)	1-3
Foreign language through the 102 level (by course or placement)	0-8
<b>Total Hours</b>	<b>11-23</b>

### Collateral requirements

STAT 210	Basic Practice of Statistics	3
Foreign language through the 202 level (by course or placement)		0-6
<b>Total Hours</b>		<b>3-9</b>

### Major requirements

POLI 103	U.S. Government (fulfills University Core social/behavioral sciences)	3
POLI 105	International Relations (fulfills approved diverse and global communities)	3
HSEP 101	Homeland Security and Emergency Preparedness	3
HSEP 301/POLI 367	Terrorism	3
HSEP 302	Emergency Planning and Incident Management	3
HSEP 310	Risk and Vulnerability Assessment	3
HSEP 311	Strategic Planning for Homeland Security and Emergency Preparedness	3
HSEP 320	The Intelligence Community and the Intelligence Process	3
HSEP 330	Legal and Constitutional Issues in Homeland Security and Emergency Preparedness	3
HSEP 490	Senior Seminar	3
Homeland security and emergency preparedness electives (Any 300- or 400-level HSEP course and/or courses taken from the list of approved electives below)		6
<b>Total Hours</b>		<b>36</b>

### Open electives

Select 39-58 open electives	39-58
-----------------------------	-------

### Total minimum requirement 120 credits

#### Approved homeland security and emergency preparedness electives

CRJS 300	Forensic Criminology	3
CRJS 320	Principles of Criminal Investigation	3
CRJS 370	Criminalistics and Crime Analysis	3
CRJS 373	Crime Scene Evidence: Law and Trial Procedure	3
CRJS 463	Comparative Criminal Justice Systems	3
CRJS 475	Criminal Procedure	3

FIRE 306	Regulatory Aspects of Safety and Risk Control	3
FIRE 307	System Safety	3
FIRE 308	Incident Investigation and Analysis	3
FIRE 309	Risk and Insurance	3
FIRE 359	Issues in Risk Management and Insurance	3
GVPA 493	Government and Public Affairs Internship	1-6
POLI 310	Public Policy	3
POLI 322	State and Local Government and Politics	3
POLI 329	Intergovernmental Relations	3
POLI/INTL 351	Governments and Politics of the Middle East	3
POLI/INTL 353	Latin American Governments and Politics	3
POLI/INTL 362	International Organizations and Institutions	3
POLI/INTL 363	U.S. Foreign Policy	3
URSP 310	Introduction to Urban and Regional Planning	3
URSP/ENVS 332	Environmental Management	3
URSP 413	Policy Implementation	3
URSP/ENVS 521	Introduction to Geographic Information Systems	3

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
HSEP 101	Homeland Security and Emergency Preparedness	3
POLI 103	U.S. Government (fulfills approved human, social and political behavior)	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Approved quantitative literacy		3-4
Foreign language (101 level)		4
Term Hours:		17-18

#### Spring semester

HUMS 202	Choices in a Consumer Society	1
POLI 105	International Relations (fulfills approved diverse and global communities)	3
STAT 210	Basic Practice of Statistics	3
UNIV 112	Focused Inquiry II	3
Approved science and technology		3-4
Foreign language (102 level)		4
Term Hours:		17-18

#### Sophomore year

##### Fall semester

HSEP 301	Terrorism	3
or POLI 367	or Terrorism	
HSEP 302	Emergency Planning and Incident Management	3
UNIV 200	Inquiry and the Craft of Argument	3
	Approved literature and civilization	3
	Foreign language (201 level)	3
	Term Hours:	15
<b>Spring semester</b>		
HSEP 310	Risk and Vulnerability Assessment	3
	Approved General Education electives	6-8
	Experiential fine arts	1-3
	Foreign language (202 level)	3
	Term Hours:	13-17
<b>Junior year</b>		
<b>Fall semester</b>		
HSEP 311	Strategic Planning for Homeland Security and Emergency Preparedness	3
HSEP 320	The Intelligence Community and the Intelligence Process	3
	Open electives	7
	Term Hours:	13
<b>Spring semester</b>		
	Homeland security and emergency preparedness electives	6
	Open electives	9
	Term Hours:	15
<b>Senior year</b>		
<b>Fall semester</b>		
HSEP 330	Legal and Constitutional Issues in Homeland Security and Emergency Preparedness	3
	Open electives	12
	Term Hours:	15
<b>Spring semester</b>		
HSEP 490	Senior Seminar	3
	Open electives	12
	Term Hours:	15
	Total Hours:	120-126

## Urban and Regional Studies, Bachelor of Science (B.S.)

**Meghan Z. Gough, Ph.D.**

Associate professor and program chair

The Bachelor of Science in Urban and Regional Studies requires 120 credits, including 40 credits within the major. The program is designed so that students may enter as late as their junior year and provides a solid foundation for professional work or advanced study aimed at addressing some of the most important challenges and issues facing the U.S. and other world regions, such as urban sprawl, economic marginalization, ethnic and racial conflict and environmental degradation. The program covers a wide range of topics related to these issues,

including transportation, housing, land use, environmental management, regional and international development, human-environment interaction, globalization and socioeconomic change. Students can focus on the subject matter of their interest by choosing to concentrate in either urban planning and policy or regional analysis and development; alternatively they may opt for a generalized course of study. Nine core courses and a lab (28 credits total) are required for all majors. These courses provide fundamental background knowledge in an array of disciplines that form the foundations of urban and regional studies, such as urban planning and design, human and physical geography, economics, environmental management, urban and public policy, and geographic information systems. Students complete their remaining 12 credits within one of the two concentrations or through a generalized course of study.

The program helps develop a theoretical and methodological background as well as analytical skills that can be used to address a wide range of issues and problems. Students acquire marketable skills in qualitative and quantitative analysis, computer usage, problem solving and communication — as well as a broad perspective on environment and society — that are essential for many occupations.

The generalized course of study option is designed for those students who have a broad interest in urban and regional studies. They can tailor this course of study to match not only intellectual interests but anticipated career goals. Students complete the core courses and then select the remaining 12 credits from any of the non-core courses listed below.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

### **Multidisciplinary understanding of urban and regional dynamics, and other factors**

Students will develop a multidisciplinary understanding of urban life, including the following aspects: (1) the urbanization process in modern America; (2) urbanization in other cultures and in non-contemporary periods; (3) urban design and the built environment; (4) urban economic geography; (5) urban demographics and urban sociology; (6) the relationship of the natural environment to urbanization and the built environment; (7) urban politics; (8) urban finance; (9) urban problems and planning as a response; (10) links between urban studies-related disciplines.

### **Mastery of general and major-specific skills**

Students will develop the skills necessary to function as a well-rounded, educated citizen, as well as skills useful in urban analysis, planning and community development careers, specifically: (1) oral communication; (2) written communication; (3) quantitative analysis; (4) library research; (5) cause and effect reasoning; (6) organized presentation of ideas; (7) scientific method; (8) critical and independent thinking; (9) computer proficiency; (10) ability to work in groups; (11) graphic communication; (12) analysis of data in map form; (13) government documents research.

### **Ethics and sense of social and personal responsibility**

Students will develop a strong ethical foundation and a sense of social and personal responsibility, including how to: (1) understand and respect the complex notions of the public good; (2) evince sensitivity to human needs and to working toward a humane and democratic society; (3) recognize and understand ethical dimensions of social conflict, make reasoned judgments to resolve conflicts and be willing to take appropriate action; (4) understand and appreciate diverse

cultural perspectives; (5) understand and adhere to ethical standards of professional behavior.

## Special requirements

Proof of competency with Excel software is a prerequisite for URSP 306, and URSP 204 (or permission of instructor) is a prerequisite for URSP 332/ENVS 332.

## Degree requirements for Urban and Regional Studies, Bachelor of Science (B.S.)

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Select six to eight credits of approved H&S general education electives		6-8
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Experiential fine arts (course offered by the School of the Arts)		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

### Collateral requirements

STAT 210	Basic Practice of Statistics	3
Total Hours		3

### Major requirements

URSP 102	Introduction to Human Geography	3
URSP 204 & URSZ 204	Physical Geography: Geomorphology and Soils and Physical Geography Laboratory: Geomorphology and Soils	4
Select one of the following:		3
URSP 108	Uncovering Richmond	
URSP 116	Introduction to the City	
URSP 120	Urban Issues in Film	
URSP 302	Land Use and Infrastructure Planning	3
URSP 306	Economic Geography	3

URSP 313	Research and Field Methods in Urban and Regional Studies	3
URSP/ENVS 332	Environmental Management	3
URSP 360	Community and Regional Analysis and GIS	3
URSP 440	Senior Capstone Seminar in Urban and Regional Studies	3
Urban and regional studies generalized course of study electives		12
Total Hours		40

### Open electives

Select 31-45 open elective credits	31-45
------------------------------------	-------

### Total minimum requirement 120 credits

#### Urban and regional studies generalized course of study electives

Select four, a minimum of 12 credits, of the following:	12
---	----

ENVS 335	Environmental Geology	
ENVS 401	Meteorology and Climatology	
ENVS 411	Oceanography	
GVPA 493	Government and Public Affairs Internship	
URSP 203	Physical Geography: Weather, Climate and Biogeography	
URSZ 203	Physical Geography Laboratory: Weather, Climate and Biogeography	
URSP 245	Housing and Community Revitalization	
URSP 261	Design of the City	
URSP 303	World Regions	
URSP 310	Introduction to Urban and Regional Planning	
URSP/ANTH 312	History of Human Settlement	
URSP 315	The Evolution of American Cities	
URSP 322	Urban Finance	
URSP 331	Geography of Latin America and the Caribbean	
URSP/AFAM/INTL 333	Geography of Africa	
URSP/INTL 334	Regional Geography of ____	
URSP/INTL 340	World Cities Outside of North America	
URSP 350/INTL 345/FRLG 345	Great Cities of the World	
URSP 391	Special Topics in Urban Studies	
URSP 397	Independent Study	
URSP 398	Independent Study	
URSP 413	Policy Implementation	
URSP 420	Regional Planning and Sustainable Development	
URSP 461	Applied Planning Studio	
URSP 502	Global Economic Change and Geography	
URSP 517	Historic Preservation in Planning	
URSP 525	Site Planning and Graphics	
URSP 541	Urban Public Policy-making Processes	



URSP 567	The American Suburb	
Total Hours		12

All courses used to satisfy nuclear engineering elective requirements must be completed with a minimum grade of C.

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
URSP 102	Introduction to Human Geography	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
URSP 108	Uncovering Richmond	3
or URSP 116	or Introduction to the City	
or URSP 120	or Urban Issues in Film	
Approved diverse and global communities		3
Approved quantitative literacy (MATH 131 Introduction to Contemporary Mathematics recommended)		3
Term Hours:		16

#### Spring semester

URSP 204	Physical Geography: Geomorphology and	4
& URSZ 204	Soils	
	and Physical Geography Laboratory: Geomorphology and Soils	
HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Approved General Education elective		3
Approved human, social and political behavior		3
Term Hours:		14

#### Sophomore year

Fall semester		Hours
STAT 210	Basic Practice of Statistics	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved General Education elective		3
Approved literature and civilization		3
Foreign language (101-level)		4
Term Hours:		16
Spring semester		Hours
URSP 302	Land Use and Infrastructure Planning	3
URSP 306	Economic Geography	3
Approved science and technology		3
Foreign language (102-level)		4
Urban and regional studies general elective		3
Term Hours:		16

#### Junior year

Fall semester		Hours
URSP 313	Research and Field Methods in Urban and Regional Studies	3
Experiential fine arts		1-3
Open elective		3

Urban and regional studies general elective	6
Term Hours:	13-15

#### Spring semester

URSP 332	Environmental Management	3
or ENV 332	or Environmental Management	
Urban and regional studies general elective		3
Open electives		9
Term Hours:		15

#### Senior year

Fall semester		Hours
URSP 360	Community and Regional Analysis and GIS	3
Open electives		12
Term Hours:		15
Spring semester		Hours
URSP 440	Senior Capstone Seminar in Urban and Regional Studies	3
Open electives		12
Term Hours:		15
Total Hours:		120-122

## Urban and Regional Studies, Bachelor of Science (B.S.) with a concentration in regional analysis and development

**Meghan Z. Gough, Ph.D.**

Associate professor and program chair

The Bachelor of Science in Urban and Regional Studies requires 120 credits, including 40 credits within the major. The program is designed so that students may enter as late as their junior year and provides a solid foundation for professional work or advanced study aimed at addressing some of the most important challenges and issues facing the U.S. and other world regions, such as urban sprawl, economic marginalization, ethnic and racial conflict and environmental degradation. The program covers a wide range of topics related to these issues, including transportation, housing, land use, environmental management, regional and international development, human-environment interaction, globalization and socioeconomic change. Students can focus on the subject matter of their interest by choosing to concentrate in either urban planning and policy or regional analysis and development; alternatively they may opt for a generalized course of study. Nine core courses and a lab (28 credits total) are required for all majors. These courses provide fundamental background knowledge in an array of disciplines that form the foundations of urban and regional studies, such as urban planning and design, human and physical geography, economics, environmental management, urban and public policy, and geographic information systems. Students complete their remaining 12 credits within one of the two concentrations or through a generalized course of study.

The program helps develop a theoretical and methodological background as well as analytical skills that can be used to address a wide range of issues and problems. Students acquire marketable skills in qualitative and quantitative analysis, computer usage, problem solving and communication — as well as a broad perspective on environment and society — that are essential for many occupations.

The concentration in regional analysis and development focuses on the economic, sociopolitical, technological and environmental transformations affecting most nations and regions. In some cases, these have given rise to difficult problems and challenges, such as poverty and economic marginalization, resource scarcity, environmental degradation and ethnic conflict. Such issues are addressed by drawing upon both the natural and social sciences and by utilizing detailed yet holistic analysis of the problems and their root causes. The concentration seeks to engage students in exploring how particular regions can maintain or create favorable economic, social and environmental conditions in light of the rapid transformations that are taking place at multiple scales. Like the discipline of geography to which it is related, the regional analysis and development concentration focuses on the phenomena of place and space and, more specifically, on the biophysical, socioeconomic and cultural characteristics of regions and the relationships among these characteristics. Students examine how and why places and regions differ from one another, how and why they change over time and how societies interact with the natural environment. They also explore the impacts of existing and potential policies and programs on regional socioeconomic and environmental conditions.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

### Multidisciplinary understanding of urban and regional dynamics, and other factors

Students will develop a multidisciplinary understanding of urban life, including the following aspects: (1) the urbanization process in modern America; (2) urbanization in other cultures and in non-contemporary periods; (3) urban design and the built environment; (4) urban economic geography; (5) urban demographics and urban sociology; (6) the relationship of the natural environment to urbanization and the built environment; (7) urban politics; (8) urban finance; (9) urban problems and planning as a response; (10) links between urban studies-related disciplines.

### Mastery of general and major-specific skills

Students will develop the skills necessary to function as a well-rounded, educated citizen, as well as skills useful in urban analysis, planning and community development careers, specifically: (1) oral communication; (2) written communication; (3) quantitative analysis; (4) library research; (5) cause and effect reasoning; (6) organized presentation of ideas; (7) scientific method; (8) critical and independent thinking; (9) computer proficiency; (10) ability to work in groups; (11) graphic communication; (12) analysis of data in map form; (13) government documents research.

### Ethics and sense of social and personal responsibility

Students will develop a strong ethical foundation and a sense of social and personal responsibility, including how to: (1) understand and respect the complex notions of the public good; (2) evince sensitivity to human needs and to working toward a humane and democratic society; (3) recognize and understand ethical dimensions of social conflict, make reasoned judgments to resolve conflicts and be willing to take appropriate action; (4) understand and appreciate diverse cultural perspectives; (5) understand and adhere to ethical standards of professional behavior.

## Special requirements

Proof of competency with Excel software is a prerequisite for URSP 306, and URSP 204 (or permission of instructor) is a prerequisite for URSP 332/ENVS 332.

## Degree requirements for Urban and Regional Studies, Bachelor of Science (B.S.) with a concentration in regional analysis and development

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional General Education requirements

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Select six to eight credits of approved H&S general education electives		6-8
Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)		
Approved H&S literature and civilization (fulfills University Core humanities/fine arts)		
Approved H&S science and technology (fulfills University Core natural/physical sciences)		
Experiential fine arts (course offered by the School of the Arts)		1-3
Foreign language through the 102 level (by course or placement)		0-8
Total Hours		11-23

### Collateral requirements

STAT 210	Basic Practice of Statistics	3
Total Hours		3

### Major requirements

URSP 102	Introduction to Human Geography	3
URSP 204 & URSZ 204	Physical Geography: Geomorphology and Soils and Physical Geography Laboratory: Geomorphology and Soils	4
Select one of the following:		3
URSP 108	Uncovering Richmond	
URSP 116	Introduction to the City	
URSP 120	Urban Issues in Film	
URSP 302	Land Use and Infrastructure Planning	3
URSP 306	Economic Geography	3

URSP 313	Research and Field Methods in Urban and Regional Studies	3
URSP/ENVS 332	Environmental Management	3
URSP 360	Community and Regional Analysis and GIS	3
URSP 440	Senior Capstone Seminar in Urban and Regional Studies	3
Regional analysis and development concentration electives		12
Total Hours		40

## Open electives

Select 31-45 open electives	31-45
-----------------------------	-------

## Total minimum requirement 120 credits

### Regional analysis and development concentration electives

Select four as directed, a minimum of 12 credits, from the following:

URSP 420	Regional Planning and Sustainable Development (required)	3
----------	--	---

Select one of the following:	3
------------------------------	---

URSP/INTL 303	World Regions	
---------------	---------------	--

URSP 331	Geography of Latin America and the Caribbean	
----------	--	--

URSP/AFAM/INTL 333	Geography of Africa	
--------------------	---------------------	--

URSP/INTL 334	Regional Geography of ____	
---------------	----------------------------	--

Select two of the following:	6
------------------------------	---

URSP 203	Physical Geography: Weather, Climate and Biogeography	
----------	---	--

URSZ 203	Physical Geography Laboratory: Weather, Climate and Biogeography	
----------	--	--

URSP/ANTH 312	History of Human Settlement	
---------------	-----------------------------	--

ENVS 335	Environmental Geology	
----------	-----------------------	--

ENVS 401	Meteorology and Climatology	
----------	-----------------------------	--

ENVS 411	Oceanography	
----------	--------------	--

URSP 502	Global Economic Change and Geography	
----------	--------------------------------------	--

Total Hours	12
-------------	----

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
URSP 102	Introduction to Human Geography	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
URSP 108 or URSP 116 or URSP 120	Uncovering Richmond or Introduction to the City or Urban Issues in Film	3
Approved diverse and global communities		3

Approved quantitative literacy (MATH 131 Introduction to Contemporary Mathematics recommended)	3
--	---

Term Hours:	16
-------------	----

### Spring semester

URSP 204 & URSZ 204	Physical Geography: Geomorphology and Soils and Physical Geography Laboratory: Geomorphology and Soils	4
---------------------	--	---

HUMS 202	Choices in a Consumer Society	1
----------	-------------------------------	---

UNIV 112	Focused Inquiry II	3
----------	--------------------	---

Approved General Education elective	3
-------------------------------------	---

Approved human, social and political behavior	3
---	---

Term Hours:	14
-------------	----

Approved General Education elective	3
-------------------------------------	---

Approved literature and civilization	3
--------------------------------------	---

Foreign language (101-level)	4
------------------------------	---

Term Hours:	16
-------------	----

STAT 210	Basic Practice of Statistics	3
----------	------------------------------	---

UNIV 200	Inquiry and the Craft of Argument	3
----------	-----------------------------------	---

Approved General Education elective	3
-------------------------------------	---

Approved literature and civilization	3
--------------------------------------	---

Foreign language (101-level)	4
------------------------------	---

Term Hours:	16
-------------	----

URSP 302	Land Use and Infrastructure Planning	3
----------	--------------------------------------	---

URSP 306	Economic Geography	3
----------	--------------------	---

URSP 303 or INTL 303	World Regions or World Regions	3
----------------------	--------------------------------	---

Approved science and technology	3
---------------------------------	---

Foreign language (102-level)	4
------------------------------	---

Term Hours:	16
-------------	----

Approved science and technology	3
---------------------------------	---

Foreign language (102-level)	4
------------------------------	---

Term Hours:	16
-------------	----

URSP 313	Research and Field Methods in Urban and Regional Studies	3
----------	--	---

Experimental fine arts	1-3
------------------------	-----

Open elective	3
---------------	---

Regional analysis and development concentration electives	6
---	---

Term Hours:	13-15
-------------	-------

URSP 332 or ENVS 332	Environmental Management or Environmental Management	3
----------------------	--	---

URSP 420	Regional Planning and Sustainable Development	3
----------	---	---

Open electives	6
----------------	---

Regional analysis and development concentration electives	3
---	---

Term Hours:	15
-------------	----

URSP 360	Community and Regional Analysis and GIS	3
----------	---	---

Open electives	12
----------------	----

Term Hours:	15
-------------	----

URSP 360	Community and Regional Analysis and GIS	3
----------	---	---

Open electives	12
----------------	----

Term Hours:	15
-------------	----

URSP 360	Community and Regional Analysis and GIS	3
----------	---	---

Open electives	12
----------------	----

Term Hours:	15
-------------	----

URSP 360	Community and Regional Analysis and GIS	3
----------	---	---

Open electives	12
----------------	----

Term Hours:	15
-------------	----

**Spring semester**

URSP 440	Senior Capstone Seminar in Urban and Regional Studies	3
Open electives		12
Term Hours:		15
Total Hours:		120-122

**Urban and Regional Studies, Bachelor of Science (B.S.) with a concentration in urban planning and policy**

**Meghan Z. Gough, Ph.D.**  
Associate professor and program chair

The Bachelor of Science in Urban and Regional Studies requires 120 credits, including 40 credits within the major. The program is designed so that students may enter as late as their junior year and provides a solid foundation for professional work or advanced study aimed at addressing some of the most important challenges and issues facing the U.S. and other world regions, such as urban sprawl, economic marginalization, ethnic and racial conflict and environmental degradation. The program covers a wide range of topics related to these issues, including transportation, housing, land use, environmental management, regional and international development, human-environment interaction, globalization and socioeconomic change. Students can focus on the subject matter of their interest by choosing to concentrate in either urban planning and policy or regional analysis and development; alternatively they may opt for a generalized course of study. Nine core courses and a lab (28 credits total) are required for all majors. These courses provide fundamental background knowledge in an array of disciplines that form the foundations of urban and regional studies, such as urban planning and design, human and physical geography, economics, environmental management, urban and public policy, and geographic information systems. Students complete their remaining 12 credits within one of the two concentrations or through a generalized course of study.

The program helps develop a theoretical and methodological background as well as analytical skills that can be used to address a wide range of issues and problems. Students acquire marketable skills in qualitative and quantitative analysis, computer usage, problem solving and communication — as well as a broad perspective on environment and society — that are essential for many occupations.

The concentration in urban planning and policy involves an examination of the evolution of urban areas, urban governments and economies, the relationship between urban activities and the natural environment, land use and the built environment, urban culture and social dynamics, and policies and planning strategies for improving urban socioeconomic and environmental conditions. Students have the opportunity to explore and develop plans and policy strategies aimed at revitalizing communities, preventing urban sprawl, fostering environmental sustainability and alleviating poverty.

**Learning outcomes**

Upon completing this program, students will know and know how to do the following:

**Multidisciplinary understanding of urban and regional dynamics, and other factors**

Students will develop a multidisciplinary understanding of urban life, including the following aspects: (1) the urbanization process in modern America; (2) urbanization in other cultures and in non-contemporary periods; (3) urban design and the built environment; (4) urban economic geography; (5) urban demographics and urban sociology; (6) the relationship of the natural environment to urbanization and the built environment; (7) urban politics; (8) urban finance; (9) urban problems and planning as a response; (10) links between urban studies-related disciplines.

**Mastery of general and major-specific skills**

Students will develop the skills necessary to function as a well-rounded, educated citizen, as well as skills useful in urban analysis, planning and community development careers, specifically: (1) oral communication; (2) written communication; (3) quantitative analysis; (4) library research; (5) cause and effect reasoning; (6) organized presentation of ideas; (7) scientific method; (8) critical and independent thinking; (9) computer proficiency; (10) ability to work in groups; (11) graphic communication; (12) analysis of data in map form; (13) government documents research.

**Ethics and sense of social and personal responsibility**

Students will develop a strong ethical foundation and a sense of social and personal responsibility, including how to: (1) understand and respect the complex notions of the public good; (2) evince sensitivity to human needs and to working toward a humane and democratic society; (3) recognize and understand ethical dimensions of social conflict, make reasoned judgments to resolve conflicts and be willing to take appropriate action; (4) understand and appreciate diverse cultural perspectives; (5) understand and adhere to ethical standards of professional behavior.

**Special requirements**

Proof of competency with Excel software is a prerequisite for URSP 306, and URSP 204 (or permission of instructor) is a prerequisite for URSP 332/ENVS 332.

**Degree requirements for Urban and Regional Studies, Bachelor of Science (B.S.) with a concentration in urban planning and policy**

**General Education requirements**

<b>University Core Education Curriculum (minimum 21 credits)</b>		
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

**Additional General Education requirements**

HUMS 202	Choices in a Consumer Society	1
Approved H&S diverse and global communities		3
Select six to eight credits of approved H&S general education electives		6-8

Approved H&S human, social and political behavior (fulfills University Core social/behavioral sciences)

Approved H&S literature and civilization (fulfills University Core humanities/fine arts)	
Approved H&S science and technology (fulfills University Core natural/physical sciences)	
Experiential fine arts (course offered by the School of the Arts)	1-3
Foreign language through the 102 level (by course or placement)	0-8
<b>Total Hours</b>	<b>11-23</b>

## Collateral requirements

STAT 210	Basic Practice of Statistics	3
----------	------------------------------	---

## Major requirements

URSP 102	Introduction to Human Geography	3
URSP 204 & URSZ 204	Physical Geography: Geomorphology and Soils and Physical Geography Laboratory: Geomorphology and Soils	4
Select one of the following:		3
URSP 108	Uncovering Richmond	
URSP 116	Introduction to the City	
URSP 120	Urban Issues in Film	
URSP 302	Land Use and Infrastructure Planning	3
URSP 306	Economic Geography	3
URSP 313	Research and Field Methods in Urban and Regional Studies	3
URSP/ENVS 332	Environmental Management	3
URSP 360	Community and Regional Analysis and GIS	3
URSP 440	Senior Capstone Seminar in Urban and Regional Studies	3
Urban planning and policy concentration electives		12
<b>Total Hours</b>		<b>40</b>

## Open electives

Select 31-45 open electives	31-45
-----------------------------	-------

## Total minimum requirement 120 credits

### Urban planning and policy concentration electives

Select four as directed, a minimum of 12 credits, from the following:

URSP 310	Introduction to Urban and Regional Planning (required)	3
URSP 541	Urban Public Policy-making Processes (required)	3
Select two of the following:		6
URSP 245	Housing and Community Revitalization	
URSP 261	Design of the City	
URSP 315	The Evolution of American Cities	
URSP 322	Urban Finance	
URSP/INTL 340	World Cities Outside of North America	
URSP 350/INTL 345/FRLG 345	Great Cities of the World	
URSP 461	Applied Planning Studio	

URSP 517	Historic Preservation in Planning	
URSP 525	Site Planning and Graphics	
URSP 567	The American Suburb	
<b>Total Hours</b>		<b>12</b>

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
URSP 102	Introduction to Human Geography	3
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
URSP 108 or URSP 116 or URSP 120	Uncovering Richmond or Introduction to the City or Urban Issues in Film	3
Approved diverse and global communities		3
Approved quantitative literacy (MATH 131 Introduction to Contemporary Mathematics recommended)		3
<b>Term Hours:</b>		<b>16</b>

### Spring semester

URSP 204 & URSZ 204	Physical Geography: Geomorphology and Soils and Physical Geography Laboratory: Geomorphology and Soils	4
HUMS 202	Choices in a Consumer Society	1
UNIV 112	Focused Inquiry II	3
Approved General Education elective		3
Approved human, social and political behavior		3
<b>Term Hours:</b>		<b>14</b>

### Sophomore year

Fall semester		
STAT 210	Basic Practice of Statistics	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved General Education elective		3
Approved literature and civilization		3
Foreign language (101-level)		4
<b>Term Hours:</b>		<b>16</b>

### Spring semester

URSP 302	Land Use and Infrastructure Planning	3
URSP 306	Economic Geography	3
Approved science and technology		3
Foreign language (102-level)		4
Urban planning and policy concentration elective		3
<b>Term Hours:</b>		<b>16</b>

### Junior year

Fall semester		
URSP 313	Research and Field Methods in Urban and Regional Studies	3
URSP 310	Introduction to Urban and Regional Planning	3
Experiential fine arts		1-3



Open elective	3
Urban planning and policy concentration elective	3
Term Hours:	13-15
<b>Spring semester</b>	
URSP 332 Environmental Management or ENVS or Environmental Management 332	3
URSP 541 Urban Public Policy-making Processes	3
Open electives	9
Term Hours:	15
<b>Senior year</b>	
<b>Fall semester</b>	
URSP 360 Community and Regional Analysis and GIS	3
Open electives	12
Term Hours:	15
<b>Spring semester</b>	
URSP 440 Senior Capstone Seminar in Urban and Regional Studies	3
Open electives	12
Term Hours:	15
Total Hours:	120-122

## Criminal justice, minor in

The criminal justice minor is offered for those students who are interested in a theoretical and practical education in the field of criminal justice. A minor in criminal justice requires a minimum of 18 credits. To complete the minor, students must complete each of the following courses:

CRJS 181	Introduction to Criminal Justice	3
CRJS 253	Introduction to Corrections	3
CRJS 254	Introduction to Policing	3
CRJS 355	Criminological Theory	3
CRJS 475	Criminal Procedure	3
Select one additional 300- or 400-level criminal justice elective		3
Total Hours		18

Please note that CRJS 181 is a prerequisite for all required minor courses and that CRJS 492 and GVPA 493 are not available to those minoring in criminal justice.

## Homeland security and emergency preparedness, minor in

A minor in homeland security and emergency preparedness consists of 18 credits. Students are required to take the following:

HSEP 101	Homeland Security and Emergency Preparedness	3
HSEP 301/POLI 367/CRJS 367	Terrorism	3
HSEP 302/CRJS 368	Emergency Planning and Incident Management	3

HSEP/CRJS 330	Legal and Constitutional Issues in Homeland Security and Emergency Preparedness	3
Select one the following:		3
HSEP 310	Risk and Vulnerability Assessment	
HSEP 311	Strategic Planning for Homeland Security and Emergency Preparedness	
HSEP 320/CRJS 375	The Intelligence Community and the Intelligence Process	
Select three additional elective credits from the HSEP electives list below in consultation with an adviser <sup>1</sup>		3
Total Hours		18

<sup>1</sup> Students also may choose these credits from whichever HSEP core courses they have not already taken.

### Approved homeland security and emergency preparedness electives

CRJS 300	Forensic Criminology	3
CRJS 320	Principles of Criminal Investigation	3
CRJS 370	Criminalistics and Crime Analysis	3
CRJS 373	Crime Scene Evidence: Law and Trial Procedure	3
CRJS 463	Comparative Criminal Justice Systems	3
CRJS 475	Criminal Procedure	3
FIRE 306	Regulatory Aspects of Safety and Risk Control	3
FIRE 307	System Safety	3
FIRE 308	Incident Investigation and Analysis	3
FIRE 309	Risk and Insurance	3
FIRE 359	Issues in Risk Management and Insurance	3
GVPA 493	Government and Public Affairs Internship	1-6
HSEP 391	Topics in Homeland Security and Emergency Preparedness	3
HSEP 491	Advanced Topics in Homeland Security and Emergency Preparedness	3
HSEP 492	Independent Study	1-4
POLI 310	Public Policy	3
POLI 322	State and Local Government and Politics	3
POLI 329	Intergovernmental Relations	3
POLI/INTL 351	Governments and Politics of the Middle East	3
POLI/INTL 353	Latin American Governments and Politics	3
POLI/INTL 362	International Organizations and Institutions	3
POLI/INTL 363	U.S. Foreign Policy	3
URSP 310	Introduction to Urban and Regional Planning	3
URSP/ENVS 332	Environmental Management	3
URSP 413	Policy Implementation	3

URSP/ENVS 521	Introduction to Geographic Information Systems	3
---------------	--	---

## Urban and regional studies, minor in

The minor in urban and regional studies requires 18 credits. All students must take the following:

Select any 100-level URSP class	3	
URSP 102	Introduction to Human Geography	3
URSP 204	Physical Geography: Geomorphology and Soils	3
Select an additional nine credits of electives from any other upper-level (300- or above) URSP courses	9	
Total Hours	18	

# SCHOOL OF MEDICINE

The School of Medicine of the then Medical College of Virginia opened on November 5, 1838, as the medical department of Hampden-Sydney College. 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 in-patient and out-patient 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 on all issues related to administration of advanced degree programs. Each advanced-degree program is represented by a faculty member who serves as director for graduate programs. Directors are appointed either by the chair of the department offering graduate degrees or, in the case of interdisciplinary programs, by the dean in consultation with the chairs of participating departments. The directors of graduate programs act on behalf of the programs and hold the responsibility and authority to represent the respective department(s) and their faculty to the school.

## Administration

1201 East Marshall Street  
P.O. Box 980565  
Richmond, Virginia 23298-0565  
medschool.vcu.edu (<http://www.medschool.vcu.edu>)

### **Jerome F. Strauss III, M.D., Ph.D.**

Executive vice president for medical affairs (VCU Health) and dean

### **Vacant**

Senior associate dean for research and research training

### **Julie Beales, M.D.**

Associate dean for veterans affairs

### **Lelia Brinegar, Ed.D.**

Assistant dean for curriculum

### **Samantha Buery-Joyner, M.D.**

Assistant dean for student affairs – Inova Campus

### **Teresa Carter, Ed.D.**

Associate dean for professional instructions and faculty development

### **Pemra Cetin**

Assistant dean for student affairs and financial aid

### **Craig E. Cheifetz, M.D.**

Associate dean for medical education – Inova Campus

### **Jan F. Chlebowski, Ph.D.**

Associate dean for graduate education

### **Ralph Ron Clark III, M.D.**

Associate dean for clinical activities

### **PonJola Coney, M.D.**

Senior associate dean for faculty affairs

### **Louis De Felice, Ph.D.**

Assistant dean for advanced degree administration

### **Susan DiGiovanni, M.D.**

Interim senior associate dean for medical education and student affairs and assistant dean for pre-clinical medical education

### **Alicia Freedy, M.D.**

Assistant dean for curriculum – Inova Campus

### **Thomas Holland**

Associate dean for alumni relations and development

### **Paul E. Mazmanian, Ph.D.**

Associate dean for assessment and evaluation studies

### **Jose Munoz, M.D.**

Interim Associate dean for patient safety and quality care

### **Mary Alice O'Donnell, Ph.D.**

Associate dean for graduate medical education

### **John Pellock, M.D.**

Senior associate dean for professional education programs

### **Paul Peterson**

Assistant dean for administration

### **Michael Ryan, M.D.**

Assistant dean for clinical medical education

### **Joy Sanders**

Assistant dean for development and alumni affairs

### **Vacant**

Senior associate dean for finance and administration

### **Constance Tucker, Ph.D.**

Assistant dean for faculty development

### **John Ward, M.D.**

Senior associate dean for clinical affairs

### **Michelle Whitehurst-Cook, M.D.**

Associate dean for admissions

### **Christopher Woleben, M.D.**

Associate dean for student affairs

## Accreditation

### Genetic counseling (master's degree)

American Board of Genetic Counseling

### Medical physics

Commission on Accreditation of Medical Physics Educational Programs

## Medicine (M.D.)

Liaison Committee on Medical Education

## Public health (master's degree)

Council on Education in Public Health

## Mission statement

The mission of the VCU School of Medicine is to provide preeminent education to physicians and scientists in order to improve the quality of health care for humanity. Through innovative, scholarly activity and a diverse educational context, the school seeks to create and apply new knowledge, and to provide and continuously improve systems of medical and science education. Furthermore, the mission includes the development of more effective health care practices to address the needs of diverse populations and to provide distinguished leadership in the advancement of medicine and science.

The primary aim of the School of Medicine is to provide an academic environment appropriate for the education of its students, including undergraduate medical students, advanced-degree (graduate) students and graduate physician house officers, as well as continuing education directed toward the needs of practicing physicians. In the classroom, laboratory, clinic and hospital, the faculty and students are brought together in teaching-learning experiences that promote scientific scholarship and personal growth in knowledge and professional skills applicable to careers in a diverse workplace environment.

The School of Medicine and its faculty have vested responsibilities for the advancement of knowledge through research and for service to the community through application of skills in biomedical knowledge, health care leadership and patient care. Therefore, the school shares with teaching the interdependent and almost inseparable objectives of research and service.

The School of Medicine is located on the MCV Campus of Virginia Commonwealth University.

For comprehensive information on the School of Medicine departments, programs and faculty, please go to the school website at [medschool.vcu.edu](http://www.medschool.vcu.edu) (<http://www.medschool.vcu.edu>).

## Faculty and facilities

The School of Medicine consists of 700 full-time faculty, including affiliates, assisted by 630 residents and fellows and more than 700 clinical voluntary faculty. Programs of instruction and research are conducted on campus, at the McGuire Veterans Affairs Medical Center and at affiliated hospitals in an effort to expose the students to the variety of clinical disorders encountered in the eastern U.S. The School of Medicine has established a geographically separate campus at the Inova Fairfax Hospital. Each year, 24 third-year students take all their clinical clerkships at Inova Fairfax Hospital. Their fourth year elective program also is based at the Inova Fairfax Hospital.

# SCHOOL OF NURSING

The School of Nursing originated in 1893 as part of the University College of Medicine. Since then, the educational program has evolved from a basic diploma program to multiple programs at the baccalaureate-, master's- and doctoral-degree levels. Additionally, the School of Nursing offers post-master's certificate programs. The School of Nursing takes pride in its long history of service to the profession of nursing and continues to be a leader in nursing education in Virginia.

## Administration

1100 East Leigh Street  
P.O. Box 980567  
Richmond, Virginia 23298-0567  
Phone: (804) 828-0724  
Fax: (804) 828-7743  
nursing.vcu.edu (<http://www.nursing.vcu.edu>)

**Jean Giddens, Ph.D., RN, FAAN**  
Dean

**Debra Barksdale, Ph.D., FNP-BC, CNE, FAANP, FAAN**  
Professor and associate dean of academic programs

**Deborah B. McGuire, Ph.D., RN, FAAN**  
Associate dean for research

**David W. Allen**  
Associate dean for business and administration

**Susan L. Lipp, RN**  
Assistant dean for enrollment and student services

## Accreditation

The baccalaureate and master's degree programs and the post-master's certificate are accredited by the Accreditation Commission for Education in Nursing. The prelicensure nursing program is approved by the Virginia Board of Nursing.

## Programs

The School of Nursing offers Bachelor of Science, Master of Science, post-master's certificate, Doctor of Philosophy and Doctor of Nursing Practice programs. Curricula and admissions information pertaining to all of these programs is available on this website and may be accessed using the program search feature at the top of this page.

Further information may be obtained by visiting the School of Nursing website at [nursing.vcu.edu](http://nursing.vcu.edu) (<http://www.nursing.vcu.edu>) or by writing to Virginia Commonwealth University, School of Nursing, Office of Enrollment and Student Services, P.O. Box 980567, Richmond, VA 23298-0567.

## Facilities and resources

The faculty and administrative offices of the school are housed at 1100 E. Leigh St. Additionally, this building has a nursing clinical resource laboratory and classrooms equipped with a full range of audiovisual equipment. Both graduate and undergraduate courses are also scheduled in other classrooms on campus.

The clinical laboratories for nursing courses are conducted at the VCU Medical Center and in numerous other urban and rural hospitals and health agencies in the area, including community medical centers and state hospitals, public health services, private clinics and offices, and federal and state centers and departments. These facilities provide generalized and specialized inpatient and ambulatory services. Students are given a range of diverse experiences in hospital and community-oriented nursing. Selection of specific facilities for student experience is based upon curricular and advanced-practice certification requirements, the educational needs of the individual student and the services available.

## Financial assistance

Applications for financial assistance must be filed for all forms of financial assistance. A Free Application for Federal Student Aid may be obtained from the Office of Financial Aid, Virginia Commonwealth University, Richmond, VA 23298-0244 or online at [fafsa.ed.gov](http://fafsa.ed.gov) (<https://fafsa.ed.gov>).

Financial assistance is available through scholarships, fellowships and assistantships administered by the School of Nursing. Additional information may be found on the school's website at [nursing.vcu.edu/admission/scholarships-and-financial-aid](http://nursing.vcu.edu/admission/scholarships-and-financial-aid) (<http://nursing.vcu.edu/admission/scholarships-and-financial-aid>).

## Departments

### Department of Adult Health and Nursing Systems

**Beth Rodgers, Ph.D., RN, FAAN**  
Professor and chair

### Department of Family and Community Health Nursing

**Leigh Small, Ph.D., RN, CPNP-PC, FNAP, FAANP, FAAN**  
Associate professor and chair

## Undergraduate information

### Academic regulations

In addition to the information below, the School of Nursing has additional requirements and all new and continuing students are responsible for compliance with all school policies listed in the School of Nursing student resource guide, available on the School of Nursing website at [nursing.vcu.edu/about-us/resources](http://nursing.vcu.edu/about-us/resources) (<http://www.nursing.vcu.edu/about-us/resources>).

### Progression

The minimum passing grade in the general education courses and the nursing major is a C/satisfactory, except in anatomy, physiology or microbiology, which must be completed with a minimum grade of B. Any nursing student who receives less than a C/satisfactory grade in any course must repeat the course with a C/satisfactory or better. Courses at the next level in the nursing major without a clinical component may be taken before students officially progress to that level. Appeal of all progression issues is made to the Undergraduate Program Committee.

If a student earns a grade of C or below in anatomy, physiology or microbiology, the course may be repeated once. If a student earns



a grade of D/unsatisfactory or below in any other course, it may be repeated once. If the repeated course or another course is failed with a grade of D/unsatisfactory or below, or C or below in anatomy, physiology or microbiology, the student may not proceed in the nursing major and is dismissed from the School of Nursing.

A student may fail a clinical course prior to the completion of the course under certain circumstances. A student whose conduct is judged to be clinically unsafe may be dismissed at any time from a clinical unit. Unsafe clinical performance is defined as behavior that is actually or potentially injurious to patients or staff and is out of the range of ordinary student mistakes. Dismissal for the remainder of the course results in a failing grade for the course as does any failure to meet course objectives.

## Completion of degree requirements – time limit

Once the student enrolls in the School of Nursing, the degree requirements must be completed within six calendar years. The credentials and programs of a candidate unable to meet this requirement may be evaluated by the Undergraduate Program Committee upon request. Such a candidate may have to meet additional requirements established during the interval since matriculation.

Students in the traditional or accelerated B.S. track who are not in continuous enrollment (as defined by university policy) may have to meet additional program/course requirements. The Undergraduate Program Committee will evaluate and determine the student's program of study if readmitted to the program.

## Preparatory study for nursing

University Academic Advising provides programs in preparation for admission into health sciences programs. For detailed information on the pre-health major in nursing (p. 39), see the UAA section of this bulletin.

## Nursing, Bachelor of Science (B.S.), accelerated program

The School of Nursing offers the following curricula in the baccalaureate program: the traditional, the accelerated B.S. and the R.N.-B.S. completion. Successful completion of curricular requirements results in a Bachelor of Science degree. Note that the applicant is responsible for seeking advice from the School of Nursing on courses taken prior to admission.

## Program goals

Students will achieve an advanced beginner level of nursing competence by demonstrating:

1. Effective therapeutic nursing practice
2. Nursing judgment
3. A spirit of inquiry
4. Professional identity

## Student learning outcomes

The graduate is a knowledgeable professional nurse who will:

1. Diagnose actual and potential health problems based on a comprehensive and focused assessment of health and illness parameters, using developmentally, culturally and ethnically appropriate approaches

2. Plan and implement holistic, evidence-based, patient centered care to patients, families, communities, and populations across the health illness continuum, across the lifespan, and across settings
3. Carry out a systematic and ongoing evaluation of identified outcomes
4. Employ strategies to promote health and prevent disease in patients, families, communities and populations
5. Use nursing judgment as a basis for decision making
6. Create a safe care environment that results in high quality patient outcomes
7. Use psychomotor skills for efficient, safe, and compassionate delivery of patient care
8. Use written, verbal, non-verbal and emerging technology methods to communicate effectively and to measure, record, and retrieve healthcare data, implement the nursing process, and enhance nursing practice.
9. Collaborate with members of the interprofessional healthcare team to plan, deliver and evaluate nursing care within the context of quality and safety and considering human, fiscal and material resources
10. Express own identity as a nurse by adhering to professional standards of ethical and legal conduct
11. Demonstrate beginning level leadership and management skills that reflect accountability, interpersonal effectiveness, and principles of ethical behavior and quality improvement
12. Articulate the value of pursuing lifelong learning and professional engagement to foster professional growth and development
13. Integrate theories and concepts from liberal education to build an understanding of the human experience and help patients, families, and communities continually progress toward fulfillment of human capacities
14. Develop an awareness of variables influencing nursing practice and delivery of health care including health care access, allocation of human, fiscal, and material resources, and health disparities

Students who hold a bachelor's degree in a field other than nursing from a regionally accredited college or university can be considered for the accelerated bachelor's program.

Admission requirements for the accelerated B.S. program are:

1. Applicants must have an earned bachelor's degree in a field other than nursing from a regionally accredited college or university. This can be outstanding at the time of application but must be completed prior to the start of the program.
2. Applicants must be eligible for readmission or be in good standing at the last college attended.
3. Applicants must have a minimum cumulative GPA of 2.5 on all college course work.
4. Applicants must present minimum SAT, ACT or GRE scores as prescribed:
  - a. SAT: 900 on the critical reading and math sections only with neither score below 400
  - b. GRE (old test): 900 on the verbal and quantitative sections with neither score below 400
  - c. GRE (new test): 291 with verbal score not lower than 146 and quantitative score not lower than 140

d. ACT: 19 composite score

5. Applicants whose native language is not exclusively English must provide evidence of English language proficiency by submitting one of the following test scores taken within 24 months at the time of application:

- a. TOEFL iBT: 100 with the following minimum subsection scores
- Writing: 24
  - Speaking: 26
  - Listening: 22
  - Reading: 22

b. IELTS: 7.5 overall band score

6. Complete the following prerequisites prior to enrollment<sup>1</sup>:

BIOL 205	Basic Human Anatomy <sup>2</sup>	4
BIOL 209	Medical Microbiology	4
& BIOZ 209	and Medical Microbiology Laboratory <sup>2</sup>	
PHIS 206	Human Physiology	4
& PHIZ 206	and Human Physiology Laboratory <sup>2</sup>	
PSYC 304	Life Span Developmental Psychology <sup>3</sup>	3
STAT 210	Basic Practice of Statistics <sup>3</sup>	3

Refer to the VCU Transfer Center website (<http://www.transfer.vcu.edu>) for equivalencies at other colleges and universities.

<sup>1</sup> Effective with summer 2017 entry, all science prerequisites must be no more than 10 years old at the time of application and all prerequisites must be completed prior to application.

<sup>2</sup> Minimum grade of B is required.

<sup>3</sup> Minimum grade of C is required.

## Degree requirements for Nursing, Bachelor of Science (B.S.), accelerated program

### General Education requirements

UNIV 111	Focused Inquiry I <sup>1</sup>	3
UNIV 112	Focused Inquiry II <sup>1</sup>	3
UNIV 200	Inquiry and the Craft of Argument <sup>1</sup>	3
Approved humanities/fine arts <sup>1</sup>		3
Approved natural/physical sciences <sup>1</sup>		4
Approved quantitative literacy <sup>1</sup>		3-4
Approved social/behavioral sciences <sup>1</sup>		4
Total Hours		23-24

<sup>1</sup> Met with previous baccalaureate degree.

### Major requirements

IPEC 501	Foundations of Interprofessional Practice	1
IPEC 502	Interprofessional Quality Improvement and Patient Safety	1
NURS 201	Concepts of Professional Nursing	2
NURS 202	Technologies of Nursing Practice	6
NURS 261	Health Assessment for Nursing Practice	3
NURS 325	Nursing of Adults I	6

NURS 335	Nursing of Women	5
NURS 345	Nursing of Children	5
NURS 355	Psychiatric-Mental Health Nursing	5
NURS 365	PATHOPHYS & PHARMACOL I	3
NURS 366	Pathophysiology and Pharmacology II	3
NURS 371	Evidence-based Practice	3
NURS 416	Community Health Nursing	5
NURS 425	Nursing of Adults II	6
NURS 478	Leadership and Management in Health Care: Theory and Application	6
NURS 496	Senior Synthesis (University Core Capstone)	7

Total Hours 67

### Total minimum requirement 124 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Credits required for admission to program: 57

#### Sophomore year

##### Summer semester

NURS 201	Concepts of Professional Nursing	2
NURS 202	Technologies of Nursing Practice	6
NURS 261	Health Assessment for Nursing Practice	3
Term Hours:		11

##### Fall semester

IPEC 501	Foundations of Interprofessional Practice	1
NURS 335	Nursing of Women	5
NURS 345	Nursing of Children	5
NURS 365	PATHOPHYS PHARMACOL I	3
Term Hours:		14

#### Junior year

##### Spring semester

IPEC 502	Interprofessional Quality Improvement and Patient Safety	1
NURS 325	Nursing of Adults I	6
NURS 355	Psychiatric-Mental Health Nursing	5
NURS 366	Pathophysiology and Pharmacology II	3
NURS 371	Evidence-based Practice	3
Term Hours:		18

##### Summer semester

NURS 425	Nursing of Adults II	6
NURS 478	Leadership and Management in Health Care: Theory and Application	6
Term Hours:		12

#### Senior year

##### Fall semester

NURS 416	Community Health Nursing	5
----------	--------------------------	---

NURS 496	Senior Synthesis	7
	Term Hours:	12
	Total Hours:	67

## Total minimum requirement 124 credits

## Nursing, Bachelor of Science (B.S.), R.N.-B.S. completion program

The School of Nursing offers the following curricula in the baccalaureate program: the traditional, the accelerated B.S. and the R.N.-B.S. completion. Successful completion of curricular requirements results in a Bachelor of Science degree. Note that the applicant is responsible for seeking advice from the School of Nursing on courses taken prior to admission.

## Program goals

Students will achieve an advanced beginner level of nursing competence by demonstrating:

1. Effective therapeutic nursing practice
2. Nursing judgment
3. A spirit of inquiry
4. Professional identity

## Student learning outcomes

The graduate is a knowledgeable professional nurse who will:

1. Diagnose actual and potential health problems based on a comprehensive and focused assessment of health and illness parameters, using developmentally, culturally and ethnically appropriate approaches
2. Plan and implement holistic, evidence-based, patient centered care to patients, families, communities, and populations across the health illness continuum, across the lifespan, and across settings
3. Carry out a systematic and ongoing evaluation of identified outcomes
4. Employ strategies to promote health and prevent disease in patients, families, communities and populations
5. Use nursing judgment as a basis for decision making
6. Create a safe care environment that results in high quality patient outcomes
7. Use psychomotor skills for efficient, safe, and compassionate delivery of patient care
8. Use written, verbal, non-verbal and emerging technology methods to communicate effectively and to measure, record, and retrieve healthcare data, implement the nursing process, and enhance nursing practice
9. Collaborate with members of the interprofessional healthcare team to plan, deliver and evaluate nursing care within the context of quality and safety and considering human, fiscal and material resources
10. Express own identity as a nurse by adhering to professional standards of ethical and legal conduct

11. Demonstrate beginning level leadership and management skills that reflect accountability, interpersonal effectiveness, and principles of ethical behavior and quality improvement
12. Articulate the value of pursuing lifelong learning and professional engagement to foster professional growth and development
13. Integrate theories and concepts from liberal education to build an understanding of the human experience and help patients, families, and communities continually progress toward fulfillment of human capacities
14. Develop an awareness of variables influencing nursing practice and delivery of health care including health care access, allocation of human, fiscal, and material resources, and health disparities

Admission requirements the R.N.-B.S. completion program include the following:

1. Applicants must be eligible for readmission or be in good standing at the last college attended.
2. Applicants must have graduated from an accredited (ACEN or CNEA) diploma or associate degree program in nursing.
3. Applicants must have a current unrestricted R.N. license or authorization to practice as an R.N. in the U.S.
4. Applicants must have a minimum cumulative GPA of 2.5 on all college course work.
5. Applicants whose native language is not exclusively English must provide evidence of English language proficiency by submitting one of the following test scores taken within 24 months at the time of application:
  - a. TOEFL iBT: 100 with the following minimum subsection scores
    - Reading: 22
    - Listening: 22
    - Speaking: 26
    - Writing: 24
  - b. IELTS: 7.5 overall band score
6. Complete the following general education courses at an accredited college or university with minimum grades of C.
  - a. The following courses (17 credit hours) must be completed prior to enrollment:
    - English composition (6)
    - Anatomy (4)
    - Physiology (4)
    - Statistics (3)
  - b. A minimum of 24 credit hours from the following 36 credits must be completed prior to matriculation. All general education courses must be completed prior to enrolling in the final nursing course:

- Introductory psychology (3)
- Developmental psychology (3)
- General sociology (3)
- Laboratory science (8)
- Microbiology (4)
- Nutrition (3)
- Philosophy (3)
- Humanities (9)

If the applicant has a bachelor's degree in another discipline, the University Core Education Curriculum requirements and General Education requirements for the R.N.-B.S. completion program will be met with the previous baccalaureate degree with the exception of the following courses that must be completed prior to enrollment: anatomy, physiology, microbiology, statistics and developmental psychology.

In addition to the above criteria, highly qualified applicants to the program who meet the following criteria are eligible for guaranteed admission:

1. Cumulative GPA of 3.0 on all college courses
2. Minimum grade of B in any nursing class
3. One recommendation that highly recommends or recommends without reservation

## Degree requirements for Nursing, Bachelor of Science (B.S.), R.N.-B.S. completion program

Credits required for admission to program: 53

### Major requirements

NURS 301	Nursing Informatics	3
NURS 307	Foundations of Professional Nursing I	3
NURS 308	Foundation of Professional Nursing II	3
NURS 309	Population Health	3
NURS 403	Evidence-based Practice in Health Care	3
NURS 406	Interprofessional Collaborative Practice	2
NURS 408	Ethics, Law and Public Policy: Application to Nursing Practice	3
NURS 409	Population Health: Application to Nursing Practice	2
NURS 462	Advanced Pathophysiological Concepts: Application to Patient Care	3
NURS 477	Leadership and Management in Health Care	4
NURS 488	Practicum in Clinical and Management Decision-making (University Core Capstone)	3
Upper-division proficiency credits awarded after successful completion of NURS 308		39
Total Hours		71

### Total minimum requirement 124 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

Credits required for admission to program: 53

Semester 1		Hours
NURS 301	Nursing Informatics	3
NURS 307	Foundations of Professional Nursing I	3
Term Hours:		6
Semester 2		
NURS 308	Foundation of Professional Nursing II	3
NURS 309	Population Health	3
Term Hours:		6
Semester 3		
NURS 403	Evidence-based Practice in Health Care	3
NURS 409	Population Health: Application to Nursing Practice	2
Term Hours:		5
Semester 4		
NURS 408	Ethics, Law and Public Policy: Application to Nursing Practice	3
NURS 462	Advanced Pathophysiological Concepts: Application to Patient Care	3
Term Hours:		6
Semester 5		
NURS 406	Interprofessional Collaborative Practice	2
NURS 477	Leadership and Management in Health Care	4
Term Hours:		6
Semester 6		
NURS 488	Practicum in Clinical and Management Decision-making	3
Term Hours:		3
Total Hours:		32

Upper-division credits to be awarded after successful completion of NURS 308: 39

## Total minimum requirement 124 credits Nursing, Bachelor of Science (B.S.), traditional program

The School of Nursing offers the following curricula in the baccalaureate program: the traditional, the accelerated B.S. and the R.N.-B.S. completion. Successful completion of curricular requirements results in a Bachelor of Science degree. Note that the applicant is responsible for seeking advice from the School of Nursing on courses taken prior to admission.

### Program goals

Students will achieve an advanced beginner level of nursing competence by demonstrating:

1. Effective therapeutic nursing practice
2. Nursing judgment

3. A spirit of inquiry
4. Professional identity

## Student learning outcomes

The graduate is a knowledgeable professional nurse who will:

1. Diagnose actual and potential health problems based on a comprehensive and focused assessment of health and illness parameters, using developmentally, culturally and ethnically appropriate approaches
2. Plan and implement holistic, evidence-based, patient centered care to patients, families, communities, and populations across the health illness continuum, across the lifespan, and across settings
3. Carry out a systematic and ongoing evaluation of identified outcomes
4. Employ strategies to promote health and prevent disease in patients, families, communities and populations
5. Use nursing judgment as a basis for decision making
6. Create a safe care environment that results in high quality patient outcomes
7. Use psychomotor skills for efficient, safe, and compassionate delivery of patient care
8. Use written, verbal, nonverbal and emerging technology methods to communicate effectively and to measure, record, and retrieve healthcare data, implement the nursing process, and enhance nursing practice
9. Collaborate with members of the interprofessional healthcare team to plan, deliver and evaluate nursing care within the context of quality and safety and considering human, fiscal and material resources
10. Express own identity as a nurse by adhering to professional standards of ethical and legal conduct
11. Demonstrate beginning level leadership and management skills that reflect accountability, interpersonal effectiveness, and principles of ethical behavior and quality improvement
12. Articulate the value of pursuing lifelong learning and professional engagement to foster professional growth and development
13. Integrate theories and concepts from liberal education to build an understanding of the human experience and help patients, families, and communities continually progress toward fulfillment of human capacities
14. Develop an awareness of variables influencing nursing practice and delivery of health care including health care access, allocation of human, fiscal, and material resources, and health disparities

Admission requirements the traditional B.S. program include the following:

1. Applicants must be eligible for readmission or be in good standing at the last college attended.
2. Applicants must have a minimum cumulative GPA of 2.5 on all college course work. Grades lower than C in any required course, except anatomy, physiology or microbiology, are not acceptable for transfer. Grades lower than B in anatomy, physiology or microbiology are not acceptable for transfer.
3. Applicants must present minimum SAT, ACT or GRE scores as prescribed:
  - a. SAT: 900 on the critical reading and math sections only with neither score below 400
  - b. GRE (old test): 900 on the verbal and quantitative sections with neither score below 400

- c. GRE (new test): 291 with verbal score not lower than 146 and quantitative score not lower than 140
- d. ACT: 19 composite score

4. Applicants whose native language is not exclusively English must provide evidence of English language proficiency by submitting one of the following test scores taken within 24 months at the time of application:
  - a. TOEFL iBT: 100 with the following minimum subsection scores
    - Reading: 22
    - Listening: 22
    - Speaking: 26
    - Writing: 24
  - b. IELTS: 7.5 overall band score
5. Complete the following prerequisites prior to enrollment<sup>1</sup>:

### VCU courses

BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory (fulfills University Core natural/physical sciences requirement)	4
BIOL 205	Basic Human Anatomy	4
BIOL 217	Principles of Nutrition	3
PSYC 101	Introduction to Psychology (fulfills University Core social/behavioral sciences requirement)	4
SOCY 101	Introduction to Sociology	3
UNIV 111	Focused Inquiry I (fulfills University Core Tier I requirement)	3
UNIV 112	Focused Inquiry II (fulfills University Core Tier I requirement)	3
Approved second laboratory science in biology, chemistry or physics <sup>2</sup>		4
Total Hours		28

Anatomy, physiology and microbiology must be completed with a minimum grade of B.

Refer to the VCU Transfer Center website (<http://www.transfer.vcu.edu>) for equivalencies at other colleges and universities.

<sup>1</sup> Effective with fall 2017 entry, all science prerequisites must be no more than 10 years old at the time of application.

<sup>2</sup> The second laboratory science cannot include anatomy, physiology or microbiology.

## Degree requirements for Nursing, Bachelor of Science (B.S.)

Credits required for admission to program: 28

### University Core Education curriculum

UNIV 111	Focused Inquiry I <sup>1</sup>	
UNIV 112	Focused Inquiry II <sup>1</sup>	
UNIV 200	Inquiry and the Craft of Argument (also fulfills collateral requirement)	3
Approved humanities/fine arts (PHIL 201, also fulfills collateral requirement)		3
Approved natural/physical sciences <sup>1</sup>		



Approved quantitative literacy (STAT 210, also fulfills collateral requirement)	3
Approved social/behavioral sciences <sup>1</sup>	
<b>Total Hours</b>	<b>9</b>

<sup>1</sup> Fulfilled through admission requirements.

## Collateral requirements

BIOL 209 & BIOZ 209	Medical Microbiology and Medical Microbiology Laboratory	4
PHIL 201	Critical Thinking About Moral Problems (fulfills University Core: humanities/fine arts)	
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PSYC 304	Life Span Developmental Psychology	3
STAT 210	Basic Practice of Statistics (fulfills University Core: quantitative literacy)	
UNIV 200	Inquiry and the Craft of Argument	
<b>Total Hours</b>		<b>11</b>

## Major requirements

IPEC 501	Foundations of Interprofessional Practice	1
IPEC 502	Interprofessional Quality Improvement and Patient Safety	1
NURS 201	Concepts of Professional Nursing	2
NURS 202	Technologies of Nursing Practice	6
NURS 261	Health Assessment for Nursing Practice	3
NURS 325	Nursing of Adults I	6
NURS 335	Nursing of Women	5
NURS 345	Nursing of Children	5
NURS 355	Psychiatric-Mental Health Nursing	5
NURS 365	PATHOPHYS & PHARMACOL I	3
NURS 366	Pathophysiology and Pharmacology II	3
NURS 371	Evidence-based Practice	3
NURS 416	Community Health Nursing	5
NURS 425	Nursing of Adults II	6
NURS 478	Leadership and Management in Health Care: Theory and Application	6
NURS 496	Senior Synthesis (University Core Capstone)	7
<b>Total Hours</b>		<b>67</b>

## Electives

Select three elective credits	3
Select six elective credits at 300 level or higher	6
<b>Total Hours</b>	<b>9</b>

## Total minimum requirement 124 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

## Credits required for admission to program: 28

### Sophomore year

Fall semester		Hours
BIOL 209 & BIOZ 209	Medical Microbiology and Medical Microbiology Laboratory	4
PHIL 201	Critical Thinking About Moral Problems	3
PHIS 206 & PHIZ 206	Human Physiology and Human Physiology Laboratory	4
PSYC 304	Life Span Developmental Psychology	3
STAT 210	Basic Practice of Statistics	3
Term Hours:		17

### Spring semester

NURS 201	Concepts of Professional Nursing	2
NURS 202	Technologies of Nursing Practice	6
NURS 261	Health Assessment for Nursing Practice	3
UNIV 200	Inquiry and the Craft of Argument	3
Elective		3
Term Hours:		17

### Junior year

#### Fall semester

IPEC 501	Foundations of Interprofessional Practice	1
NURS 325	Nursing of Adults I	6
NURS 355	Psychiatric-Mental Health Nursing	5
NURS 365	PATHOPHYS PHARMACOL I	3
Term Hours:		15

#### Spring semester

IPEC 502	Interprofessional Quality Improvement and Patient Safety	1
NURS 335	Nursing of Women	5
NURS 345	Nursing of Children	5
NURS 366	Pathophysiology and Pharmacology II	3
NURS 371	Evidence-based Practice	3
Term Hours:		17

### Senior year

#### Fall semester

NURS 425	Nursing of Adults II	6
NURS 478	Leadership and Management in Health Care: Theory and Application	6
Elective (300-level or higher)		3
Term Hours:		15

#### Spring semester

NURS 416	Community Health Nursing	5
NURS 496	Senior Synthesis	7
Elective (300-level or higher)		3
Term Hours:		15
Total Hours:		96

## Total minimum requirement 124 credits

# 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 to selected students a six-year program leading to the Doctor of Pharmacy degree and this program 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 73 credits of pre-professional studies taken at VCU or elsewhere. In 1996 a part-time program was offered that permits current Bachelor of Science in Pharmacy degree holders to earn the Doctor of Pharmacy degree in a nontraditional format requiring students to come to campus infrequently. This program was phased out in 2015 and no longer accepts students for enrollment. Since 1971, all pharmacy students have participated in a clerkship program (now referred to as advanced pharmacy practice experiences) during the final year of the curriculum. Beginning 2008, the school added introductory pharmacy practice experiences during the first three years of the program to gradually transition the student from the academic classroom setting into the practice arena. Students spend their final year in a variety of practice settings under the supervision of highly qualified faculty preceptors.

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. 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.

Students may elect to pursue a joint Pharm.D./M.S., Pharm.D./Ph.D., Pharm.D./M.B.A. or Pharm.D./M.P.H. program. Such students must apply to, and be accepted by, both programs separately.

## Administration

410 North 12th Street  
P.O. Box 980581  
Richmond, Virginia 23298-0581  
(804) 828-3000  
Fax (804) 827-0002  
pharmacy.vcu.edu (<http://www.pharmacy.vcu.edu>)

**Joseph T. DiPiro, Pharm.D.**  
Dean

**Cynthia K. Kirkwood, Pharm.D., BCPP**  
Executive associate dean for academic affairs

**Thomas P. Reinders, Pharm.D.**  
Associate dean for admissions and student services

**Aron Lichtman, Ph.D.**  
Associate dean for research and graduate studies

**Phylliss M. Moret**

Assistant dean for experiential education

**Victoria Savoy**  
Assistant dean for finance and administration

**Michael J. Clarke, Pharm.D.**  
Assistant dean for INOVA Campus

**Rafael Saenz, Pharm.D.**  
Assistant dean for UVa campus

**Sean L. Bates**  
Executive director for postgraduate educational programs

**Veronica P. Shuford**  
Director of educational innovation and assessment

**Ellen Carfagno**  
Director of development

**Brian A. Canaday**  
Director of academic technology

**Cynthia H. McMullen**  
Director of public relations and communications

## Statement of purpose

The School of Pharmacy at Virginia Commonwealth University 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

The mission of the Virginia Commonwealth University School of Pharmacy is to achieve excellence in professional and graduate programs through innovative education and leading-edge research. The school will graduate outstanding future pharmacists and scientists who will improve human health, foster exemplary research and provide sustaining contributions to interprofessional patient care.

### Vision

The Virginia Commonwealth University School of Pharmacy will be a transformational leader in pharmacy education, clinical practice and clinical and pharmaceutical research.

### Core values

Core values express deeply held beliefs and form the foundation on which we conduct ourselves. In an everchanging world, core values are constant. The students, faculty and staff at the School of Pharmacy embrace a set of core values that creates a culture conducive to producing an optimal learning and work environment.

We:

#### 1. Are innovative and open-minded

We embrace innovation and are open to change and diversity of ideas.

**2. Embrace change that drives excellence**

We maintain a willingness to change to further the mission and vision of the School.

**3. Pursue growth and personal development**

We pursue professional and personal growth and development to drive excellence.

**4. Demonstrate integrity and respect**

We demonstrate moral and ethical principles, personal responsibility and respect for others.

**5. Foster collaboration**

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

**6. Seek value-added solutions**

Faculty and staff enhance their service by taking extra steps necessary to fully contribute to the School's mission.

**7. Encourage commitment**

We believe that all faculty, staff and students must strive to achieve the School's mission.

**8. Express gratitude**

We embrace innovation and are open to change and diversity of ideas.

for teaching include area hospitals and pharmacies. The major library holdings are in the Tompkins-McCaw 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 Institute for Structural Biology, Drug Discovery and Development at the Virginia BioTechnology Research Park. The institute makes use of synthetic medicinal chemistry, X-ray crystallography, NMR, protein and nucleic acid chemistry, bacterial enzymology and molecular pharmacology to promote drug development. 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 Transformation.

## Philosophy

The School of Pharmacy has committed to developing progressive models of pharmacy practice while maintaining the foundational pharmaceutical sciences. In developing the curriculum of the school, the faculty recognizes that an educated person should be prepared to assume a responsible and rewarding role in society. The new paradigm of patient-centered, team-based care guides the school's curriculum committee and faculty in the design and implementation of the Doctor of Pharmacy curriculum. The curriculum is designed to provide a sound, scientific and professional background for both those who will enter the practice of pharmacy directly and those who wish to continue graduate education in the pharmaceutical sciences. It also includes courses in the arts and humanities in order to provide students with a broad educational base that will permit participation in community life, not only as a professional, but also as an informed, concerned citizen. The professional curriculum is rigorous and highly demanding of the student's time. The faculty has adopted educational outcomes for the curriculum that describe the knowledge, skills, behaviors, abilities and attitudes that promote holistic patient well-being expected of graduates to deliver the highest quality of direct patient care as an interprofessional team member.

## Facilities

The School of Pharmacy is located in the Robert Blackwell Smith Building at 12th and East Clay streets. This building — named in honor of a distinguished former dean of pharmacy, former president of the Medical College of Virginia and former provost of the MCV Campus — was completed in 1984 with the help of contributions from many alumni and friends of the School of Pharmacy. Additional classrooms, offices and laboratories are located in McGuire Hall and the Virginia BioTechnology Research Park, both located within a few blocks of the Smith Building.

Classes for students in pharmacy also are conducted in Sanger Hall, located between 11th and 12th streets on East Marshall Street, and McGuire Hall, located at the corner of 12th and Clay streets. In conjunction with VCU Health, students receive clinical experience in the hospitals and clinics on the MCV Campus. Other facilities available

# SCHOOL OF SOCIAL WORK

The oldest of its kind in the South, Virginia Commonwealth University's School of Social Work was established in 1917 as the Richmond School of Social Economy. Later renamed the School of Social Work and Public Health, it became the first unit of Richmond Professional Institute.

The school was created initially in response to community needs in working with World War I veterans and their social and health problems. Subsequent development of the school has expanded activity into all areas of human service.

With the creation of VCU in 1968, the School of Social Work became a unit of what is now the university's Monroe Park Campus. The school offers baccalaureate-, master's- and doctoral-level programs in Richmond, and the capital provides educational opportunities in many state government agencies.

Social work education at VCU is highly individualized and is characterized by a close relationship between faculty and students. Faculty members help students learn the form and method of social work practice, and students are encouraged to discover their own unique style of helping others. The school's educational programs are designed to prepare students for practice in many different kinds of social agencies. A combination of classroom courses and concurrent fieldwork experiences facilitates integration of knowledge, attitudes and skills necessary for professional practice. The integrated class and fieldwork curriculum offers students the opportunity to acquire a substantial base in social work practice, patterns of human behavior and development, organization and operation of social welfare programs and policies, the methods of scientific inquiry in social work, and the needs of special populations.

## The profession of social work

The goals of the profession of social work are to provide services to persons who are vulnerable due to a lack of personal, social and/or institutional resources to meet their emotional, health and economic needs. Social work practice is the application of professional knowledge, skills and values across a range of settings and populations. The focus of practice is on individuals, couples, families, groups and communities. In addition to direct clinical social work practice, social workers are involved in the administration of human service programs, social planning, the development of social policies, research and evaluation, and teaching.

In order to achieve the goals of promoting social justice and enhancing well-being for individuals, families, groups and communities, social workers provide a variety of services primarily in public and nonprofit organizational contexts. Examples of the range of settings in which social workers practice include community centers, public social services, child welfare, residential treatment facilities, schools, community mental health agencies, family and children's service agencies, psychiatric and acute care hospitals, substance abuse treatment facilities, services for the elderly, court services and adult and juvenile rehabilitation facilities.

Professional education for social work practice dates to the early 1900s. The contributions of the profession are evidenced in health and mental health care, the well-being of children and families, the development and implementation of social policies, the planning, delivery and evaluation of human services, and a broad base of research on the human condition. The knowledge base of the profession and the integration of related social, behavioral and biological sciences acquired

through professional education facilitates the contributions of social workers in multidisciplinary contexts.

Social work practice is designed to enrich quality of life by enabling individuals, groups, communities and organizations to achieve their greatest potential development. The goal of the School of Social Work at VCU is to provide professional education in response to these needs.

## Administration

1000 Floyd Avenue  
P.O. Box 842027  
Richmond, Virginia 23284-2027  
(804) 828-1030  
Fax: (804) 828-0716  
socialwork.vcu.edu (<http://socialwork.vcu.edu>)

**James E. Hinterlong, Ph.D.**  
Dean

**Humberto Fabelo, Ph.D.**  
Associate dean for academic and student affairs

**Elizabeth M.Z. Farmer, Ph.D.**  
Associate dean for research

**Denise Burnette, Ph.D.**  
Director of Ph.D. program

**Melissa L. Abell, Ph.D.**  
Director, M.S.W. Program

**Ananda Newmark, Ph.D.**  
Director, B.S.W. Program

## Accreditation

VCU's Bachelor of Social Work and Master of Social Work programs are accredited by the Commission on Accreditation of the Council on Social Work Education — the accrediting body for all schools of social work at both the baccalaureate and master's levels. Copies of the Accreditation Standards and Curriculum Policy Statement are available in the Office of the Dean.

## Financial assistance

Although financial assistance is limited, some funds are available from a variety of sources. No prospective student should refrain from seeking admission to the school for financial reasons alone. Besides the federal financial aid programs outlined in the undergraduate or graduate study areas of the bulletins, the university and the school also offer scholarships and/or teaching assistantships at all degree levels.

The H. H. Hibbs Loan Fund was established by the School of Social Work Alumni Association for short-term emergency needs. Enrolled students who wish to apply for a loan should discuss this with their faculty adviser and the associate dean.

For more information on these financial aid opportunities, visit the School of Social Work website at [socialwork.vcu.edu/student/scholarships](http://socialwork.vcu.edu/student/scholarships) (<https://socialwork.vcu.edu/student/scholarships>).

## Continuing education

Continuing education is a vital part of professional development. The School of Social Work offers institutes and workshops as part of the school's commitment to enhance social work practice and broaden educational experiences for students, social workers, field instructors and others in social service delivery systems.

State, regional and local agencies and institutions frequently identify educational and training needs in content or skill areas for selected staff members. The school, through contractual arrangements, contributes expertise in designing and implementing short-term training courses and materials. Offerings are planned throughout the year.

## Associations and student interest groups

### Alumni Association

The School of Social Work Alumni Association supports the school, its students and faculty. All graduates of the School of Social Work are members of the alumni association. The association falls under the umbrella of the VCU Alumni Association.

### B.S.W. Student Association

The Baccalaureate Social Work Student Association, an organization of students in the Bachelor of Social Work Program, was established to facilitate communication among students and between the student body and the school faculty and staff. This organization plays a vital role in the educational process. Through student representation on committees within the school, BSWSA members participate in decision-making processes. In addition, the association enables students to conduct a variety of social and professional activities throughout the year.

### M.S.W. Student Association

The Master of Social Work Student Association is the organization of M.S.W. students enrolled in the school. Established for the purposes of facilitating communication among students and between the student body and the school, the association provides a means by which student concerns and ideas can be formulated and acted upon. It also enables students to conduct a variety of social, civic and educational activities throughout the year.

This organization plays a vital role in the educational process. Student contributions to the governance and curriculum of the school are of value to both the institution and the students. Participation in the decision-making process is accomplished through student representation on committees. Faculty and students work closely together throughout the year to meet the needs of graduate social work education. Students participate as full members of committees within the school.

### Association of Black Social Workers – VCU Chapter

The Association of Black Social Workers was established to create and maintain an atmosphere of unity and support among black students in the School of Social Work. It serves to assist students in their personal and professional growth and development. Membership in this organization helps students to develop a keen awareness of the acute needs of the black community and the active role that must be assumed by the dedicated black professional social worker in promoting the general welfare of black citizens. To attain these goals, the organization utilizes the educational process and related experiences of students at the school and in fieldwork. Students are encouraged to participate in all phases of the academic environment.

## LGBTQIA and Allied Social Work Group VCU

The LGBTQIA and Allied Social Work Group provides a safe space for LGBTQIA and allied social workers to collaborate and engage in advocacy efforts. The organization also promotes awareness of LGBTQIA topics within the VCU social work community through curricula building, education and social events.

## Doctoral Student Association

The Doctoral Student Association is a collegial association available to all doctoral students regardless of full- or part-time status. Its primary purpose is to provide information, resources, advocacy and support to students throughout the doctoral program experience. Governance of the association is conducted on a rotating leadership and consensual basis. The Doctoral Student Association provides doctoral student representatives to various committees of the school governance structure.

## Other student interest groups

The School of Social Work supports the development of groups that address a variety of student needs and interests.

## B.S.W. Program

**Ananda Newmark, Ph.D.**

Director, B.S.W. Program

Email: [anewmark@vcu.edu](mailto:anewmark@vcu.edu)

Phone: (804) 828-0456

The B.S.W. Program administers the undergraduate offerings of the School of Social Work, including the Bachelor of Social Work and the minor in social welfare.

Guided by the principle of promoting social justice, the goals of the B.S.W. Program are:

1. To provide an integrated curriculum based on the knowledge, skills, ethics and values essential for beginning generalist social work practice
  2. To offer an educational experience that facilitates the critical analysis of social work knowledge and practice
  3. To provide classroom and field instruction experiences designed to promote culturally sensitive practice with diverse and oppressed groups
  4. To provide an environment that encourages lifelong learning and prepares students for professional growth and development
- Social Work, Bachelor of (B.S.W.) (p. 483)
  - Social welfare, minor in (p. 482)

## Social welfare, minor in

A minor in social welfare is available to non-social work majors. This minor consists of 18 credits, including:

SLWK 201	Introduction to Social Work	3
SLWK 422	Social Welfare Legislation and Services	3
Select four of the following:		12
SLWK 230	Communication in the Helping Process	
SLWK 311	Social Work and Oppressed Groups	
SLWK 313	Person in Society I	
SLWK 330	Person in Society II	



SLWK 380	Foundations of Social Work Research I	
SLWK 381	Foundations of Social Work Research II	
SLWK 431	Person in Society III	
Total Hours		18

Practice and field courses are restricted to majors.

## Social Work, Bachelor of (B.S.W.)

The Bachelor of Social Work requires completion of 120 credits, including 46 credits in the major. The curriculum of the baccalaureate program is specifically designed to prepare students for beginning-level generalist social work practice. This practice model requires a broad base of knowledge about individuals, families, groups, communities and organizations and an appreciation of cultural diversity. General education courses provide an essential foundation for the upper-level professional curriculum and are required for admission to junior and senior social work courses.

## Learning outcomes

Upon completing this program, students will know and know how to do the following:

1. Identify as a professional social worker and conduct oneself accordingly
2. Apply social work ethical principles to guide professional practice
3. Apply critical thinking to inform and communicate professional judgments
4. Engage in diversity and difference in practice
5. Advance human rights and social and economic justice
6. Engage in research-informed practice and practice-informed research
7. Apply knowledge of human behavior and the social and environment
8. Engage in policy practice to advance social and economic well-being and to deliver effective social work services
9. Respond to contexts that shape practice
10. Engage, assess, intervene and evaluate with individuals, families, groups, organizations and communities

## Academic policies

### Transfer students

Students who transfer to VCU from another institution as social work majors are not required to complete the UNIV 111 and UNIV 112 sequence. Instead, these students must transfer three credits in writing and composition course work with a grade of C or better (approved by the program director) in lieu of UNIV 111. Students may also transfer three additional credits in writing and composition course work with a grade of C or better (approved by the program director) in lieu of UNIV 112 or complete UNIV 200 at VCU with a grade of C or better. The remaining three credits from the UNIV 111, UNIV 112 and UNIV 200 sequence requirement may be completed as general electives. This policy applies only to students who transfer to VCU after their freshman year and may not be used by students who began their studies as freshmen at VCU.

Transfer of credits from other colleges or universities or from other programs at VCU is determined on an individual basis.

### Application process

Students eligible to register for upper-level social work courses need to make an appointment with their adviser to review and complete

the "Application for Admission to the B.S.W. Professional Preparation Program" form. This form is available from your student success adviser. Although the B.S.W. program can be completed on a part-time basis, it cannot be completed exclusively in the evening because of field practicum requirements and the scheduling of some classes.

## Course restrictions

Practice (SLWK 332, SLWK 441 and SLWK 442) and field education (SLWK 393, SLWK 494-SLWK 495) courses and the senior seminar (SLWK 499) are restricted to social work majors only. Students minoring in social welfare, or other students with permission of program director or course instructor, may take the following:

SLWK 311	Social Work and Oppressed Groups	3
SLWK 313	Person in Society I	3
SLWK 330	Person in Society II	3
SLWK 380	Foundations of Social Work Research I	3
SLWK 381	Foundations of Social Work Research II	3
SLWK 422	Social Welfare Legislation and Services	3
SLWK 431	Person in Society III	3

In all cases, however, prerequisites must be satisfied.

Field placements require students to spend 14 hours a week in an agency and cannot be completed on nights and weekends.

## Honors in social work

Undergraduate social work majors may earn honors in social work by excelling academically and completing a research-based honors thesis under the supervision of faculty mentors. Students apply for honors in social work in the second semester of their junior year (spring or summer). To graduate with honors in social work, students must satisfy all of the following conditions:

- Earn a 3.5 cumulative grade point average.
- Earn a grade of A in SLWK 380 and SLWK 381 and a minimum grade of B in all other social work courses.
- Complete six to nine credits of independent study (SLWK 492) with a minimum grade of B to propose and implement a research project under the supervision of a faculty mentor.
- Present and successfully defend in writing and orally the findings from the research project in the form of an honors thesis to a committee of three faculty members (one of whom is the student's mentor).

Students who meet these requirements and all other graduation requirements of the university will have honors in social work noted on their transcripts. For further information about the application process and detailed instructions for completing the honors thesis, students should contact the B.S.W. program director.

## Special requirements

To complete lower-division requirements and begin the professional preparation curriculum of the B.S.W. program, students must:

1. Complete the following specific courses (38 credits):
 

ANTH 103	Introduction to Anthropology	3
BIOL 101	Biological Concepts	3
BIOZ 101	Biological Concepts Laboratory	1

MATH 131	Introduction to Contemporary Mathematics	3
PHIL	from approved list	3
PSYC 101	Introduction to Psychology	4
PSYC 304	Life Span Developmental Psychology	3
SLWK 201	Introduction to Social Work	3
SLWK 230	Communication in the Helping Process	3
SOCY 101	Introduction to Sociology	3
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Total Hours		38

- Complete 16 additional credits from the general education requirements for a total of 54 credits to achieve junior status
- Achieve a minimum grade of C in UNIV 112 and UNIV 200
- Achieve a minimum grade of B in SLWK 201 and SLWK 230
- Achieve a minimum cumulative GPA of 2.5
- Apply for admission with academic adviser to begin the professional preparation curriculum of the B. S. W. program.
- Agree to abide by the National Association of Social Workers Code of Ethics as students and emerging professionals

#### Other program requirements and guidelines:

- All 300 level SLWK prerequisite courses require a minimum grade of C before entering 400-level SLWK courses.
- Students must have a minimum grade of C in all required social work courses to graduate.
- A student who earns a grade of D or F in any required social work course may repeat the course once. If a grade of D or F is earned in the repeated course, the student will be terminated from the B.S.W. program.
- Credit is not given for life experiences.
- As a condition for graduation, students must submit in the spring term of a senior year a portfolio of selected assignments.
- There are additional policies that affect students' progression in the professional degree program. Students are responsible for compliance with these policies. They are listed in the Student Policy Handbook, which is available on the School of Social Work website at [socialwork.vcu.edu](http://socialwork.vcu.edu) (<http://socialwork.vcu.edu>).

Foreign language requirement: Students who place into or are waived out of the 101 level in a foreign language must complete the 102 level in the same language. Students who place into or are waived out of the 101 and 102 level in a foreign language must complete at least one college-level foreign language course in any language. Credits earned by CLEP do not count toward the fulfillment of this requirement.

## Degree requirements for Social Work, Bachelor of (B.S.W.)

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3

Approved humanities/fine arts	3
Approved natural/physical sciences	3-4
Approved quantitative literacy	3-4
Approved social/behavioral sciences	3-4
Total Hours	21-24

#### Additional General Education requirements

Select one of the following:	3
Any ARTH (except ARTH 360)	
MHIS 243	Music Appreciation
Any RELS	
Any English literature	
Any PHIL <sup>1</sup>	
Any foreign language at 200 level or above	
POLI 341	History of Political Theory: Classical to Modern
POLI 342	History of Political Theory: Modern to Contemporary
HIST 307	The High Middle Ages
HIST 336	History of Christianity II
HIST 365/GSWS 341	American Women's History I
HIST 366	American Women's History II
Any topical or honors course approved by program director	
Select one of the following:	3
BIOL 103	Environmental Science
BIOL 201	Human Biology
BIOL 217	Principles of Nutrition
SOCS 340	Human Sexuality
PSYC 401	Physiological Psychology
PSYC 406	Perception
PSYC 412	Health Psychology
Select one of the following approved PHIL courses:	3
PHIL 201	Critical Thinking About Moral Problems
PHIL 211	History of Ethics
PHIL 212	Ethics and Applications
PHIL 213	Ethics and Health Care
PHIL 221	Critical Thinking
PHIL 222	Logic
Select nine elective credits from HIST, POLI or ECON	9
Foreign language at the 101 and 102 level (including ASL)	8
Total Hours	26

<sup>1</sup> Except PHIL 201, PHIL 211, PHIL 212, PHIL 213, PHIL 214, PHIL 221, PHIL 222

### Collateral requirements

ANTH 103	Introduction to Anthropology	3
BIOL 101 & BIOZ 101	Biological Concepts and Biological Concepts Laboratory (satisfies University Core natural/ physical sciences)	4
Select one of the following (satisfies approved quantitative literacy):		3

MATH 131	Introduction to Contemporary Mathematics	
MATH 141	Algebra with Applications	
MATH 151	Precalculus Mathematics	
MATH 200	Calculus with Analytic Geometry	
PSYC 101	Introduction to Psychology (satisfies University Core social/behavioral sciences)	4
PSYC 304	Life Span Developmental Psychology	3
PSYC 407	Psychology of the Abnormal	3
SOCY 101	Introduction to Sociology	3
Select one of the following (satisfies University Core humanities/fine arts):		3
ENGL 215	Textual Analysis	
PHIL 250	Thinking About Thinking	
RELS 108	Human Spirituality	
Total Hours		20

## Major requirements

SLWK 201	Introduction to Social Work	3
SLWK 230	Communication in the Helping Process	3
SLWK 311	Social Work and Oppressed Groups	3
SLWK 313	Person in Society I	3
SLWK 330	Person in Society II	3
SLWK 332	Social Work Practice: Fundamentals	3
SLWK 380	Foundations of Social Work Research I	3
SLWK 381	Foundations of Social Work Research II	3
SLWK 393	Junior Field Instruction	3
SLWK 422	Social Welfare Legislation and Services	3
SLWK 431	Person in Society III	3
SLWK 441	Social Work Practice I	3
SLWK 442	Social Work Practice II	3
SLWK 494	Senior Field Instruction I	3
SLWK 495	Senior Field Instruction II	3
SLWK 499	Senior Seminar (capstone)	1
Total Hours		46

## Open electives

Select 13 open elective credits 13

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
ANTH 103	Introduction to Anthropology	3
MATH 131	Introduction to Contemporary Mathematics (satisfies University Core quantitative literacy)	3
PSYC 101	Introduction to Psychology (satisfies University Core social/behavioral sciences)	4
SOCY 101	Introduction to Sociology	3

UNIV 111	Focused Inquiry I	3
Term Hours:		16

### Spring semester

BIOL 101	Biological Concepts	4
& BIOZ 101	and Biological Concepts Laboratory	
ENGL 215	Textual Analysis	3
or RELS 108	or Human Spirituality	
or PHIL 250	or Thinking About Thinking	
UNIV 112	Focused Inquiry II	3
Electives from HIST, POLI or ECON		6
Term Hours:		16

### Sophomore year

Fall semester		
SLWK 230	Communication in the Helping Process	3
UNIV 200	Inquiry and the Craft of Argument	3
Foreign language 101		4
Elective from HIST, POLI or ECON		3
Open elective		3
Term Hours:		16

### Spring semester

PSYC 304	Life Span Developmental Psychology	3
SLWK 201	Introduction to Social Work	3
Foreign language 102		4
PHIL 201	Critical Thinking About Moral Problems	3
or PHIL 211	or History of Ethics	
or PHIL 212	or Ethics and Applications	
or PHIL 213	or Ethics and Health Care	
or PHIL 221	or Critical Thinking	
or PHIL 222	or Logic	
Open elective		1
Term Hours:		14

### Junior year

Fall semester		
SLWK 311	Social Work and Oppressed Groups	3
SLWK 313	Person in Society I	3
SLWK 380	Foundations of Social Work Research I	3
Additional General Education course <sup>1</sup>		3
Open elective		3
Term Hours:		15

### Spring semester

SLWK 330	Person in Society II	3
SLWK 332	Social Work Practice: Fundamentals	3
SLWK 381	Foundations of Social Work Research II	3
SLWK 393	Junior Field Instruction	3
Open elective		3
Term Hours:		15

### Senior year

**Fall semester**

SLWK 422 or SLWK 431	Social Welfare Legislation and Services or Person in Society III	3
SLWK 441	Social Work Practice I	3
SLWK 494	Senior Field Instruction I	3
BIOL 103 or BIOL 201 or BIOL 217 or SOCS 340 or PSYC 401 or PSYC 406 or PSYC 412	Environmental Science or Human Biology or Principles of Nutrition or Human Sexuality or Physiological Psychology or Perception or Health Psychology	3
Open elective		3
Term Hours:		15

**Spring semester**

PSYC 407	Psychology of the Abnormal	3
SLWK 422 or SLWK 431	Social Welfare Legislation and Services or Person in Society III	3
SLWK 442	Social Work Practice II	3
SLWK 495	Senior Field Instruction II	3
SLWK 499	Senior Seminar	1
Term Hours:		13
Total Hours:		120

<sup>1</sup> Select one of the following: any ARTH, MHIS 243, any RELS, any English literature, any PHIL (except PHIL 201, PHIL 211, PHIL 212, PHIL 213, PHIL 214, PHIL 221, PHIL 222), any foreign language at 200 level or above, POLI 341, POLI 342, HIST 307, HIST 336, HIST 365, HIST 366 or any topical or honors course approved by program director.

# VCU LIFE SCIENCES

VCU entered a new era when it implemented, as one of its highest priorities, a new university-wide matrix academic organization called VCU Life Sciences, created in response to the need to prepare students for the anticipated growth in new life sciences jobs in the coming decades. The skills identified for these jobs require highly interdisciplinary or multidisciplinary approaches, often falling between the boundaries of traditional academic disciplines. The way that the life sciences are understood and taught is likely to be fundamentally different, with increasing emphasis on systems biosciences as an important complement to more traditional, purely reductive approaches. The objective of Phase II of VCU's strategic plan specifically outlines the need to bring VCU's major academic and administrative divisions together to work on mutual initiatives that will accomplish VCU's goal of national leadership. VCU Life Sciences is a response to that objective.

## Faculty

VCU Life Sciences faculty members are drawn from departments across the university. Lists of participating faculty and academic affiliations are available on the VCU Life Sciences website (<http://www.vcu.edu/lifesci>) for each program.

## Facilities

VCU Life Sciences comprises the resources and interests not only of the Monroe Park Campus and the VCU Medical Center, but also the Virginia BioTechnology Research Park (<http://www.vabiotech.com>) and the Inger and Walter Rice Center for Environmental Life Sciences (<http://www.vcu.edu/rice>), a property of 342 acres overlooking the James River in Charles City County. The \$27 million Eugene P. and Lois E. Trani Center for Life Sciences houses administrative offices, the Center for Environmental Studies, state-of-the-art laboratories and classrooms, and a climate-controlled greenhouse. The Center for the Study of Biological Complexity, including the Center for High Performance Computing at VCU, is housed in Grace E. Harris Hall.

VCU Life Sciences supports two university centers for its research and teaching efforts: the Center for Environmental Studies (<http://www.vcu.edu/cesweb>) and the Center for the Study of Biological Complexity (<http://www.vcu.edu/csbc>).

## Administration

1000 West Cary Street  
P.O. Box 842030  
Richmond, Virginia 23284-2030  
Phone: (804) 827-5600  
Fax: (804) 828-1961  
[vcu.edu/lifesci](http://www.vcu.edu/lifesci) (<http://www.vcu.edu/lifesci>)

**Leonard A. Smock, Ph.D.**  
Interim vice provost for life sciences

**Gregory A. Buck, Ph.D.**  
Director, Center for the Study of Biological Complexity

**Herschell S. Emery, Ph.D.**  
Director of undergraduate curricula

**Gregory C. Garman, Ph.D.**  
Director, Center for Environmental Studies

**Brian Verrelli, Ph.D.**  
Director, Ph.D. in Integrative Life Sciences program

## Undergraduate information

### General education requirements

The general education program for VCU Life Sciences is designed to further the university's commitment to a core academic experience common to all of its students while providing a solid foundation for those students seeking a 21st-century life sciences education. This general education program meets the goals and competencies of the VCU Core Curriculum, actively engaging students in a learning-centered program that helps them to make better sense of their learning by providing a core of shared academic experiences. The Core Curriculum provides students with opportunities to improve oral and written communication skills, to develop critical thinking abilities, to experience working on collaborative projects, to attain information fluency, to achieve quantitative literacy and to understand ethical perspectives and civic responsibilities in the 21st century. Moreover, the VCU Life Sciences general education program enhances the university core curriculum with courses that provide the competencies necessary for a future in the dynamic and global fields of the life sciences.

The VCU Life Sciences general education program totals 27 to 39 credit hours within the following major divisions:

#### Foundational courses

LFSC 301	Integrative Life Sciences Research	3
UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
Approved research and academic writing course (university core)		3

#### Quantitative literacy

The following may be completed by credit or placement:		0-4
MATH 151	Precalculus Mathematics	
STAT 210	Basic Practice of Statistics	3
or STAT 212	Concepts of Statistics	

#### Core competency courses

Select one course from each of the following categories of university-approved core courses (see university core lists):

Humanities/fine arts	
Social/behavioral sciences	
Natural/physical sciences	

#### Global literacy

Completion of a foreign language through the 102 level or an equivalent course or by placement	0-8
--	-----

#### Capstone experience

An approved course integrating the core curriculum program with the student's major	3
---	---

Total Hours 27-39

## Center for Environmental Studies

**Gregory C. Garman, Ph.D.**  
Director

**Stephen P. McIninch, Ph.D.**



Director for graduate studies

**Rodney J. Dyer, Ph.D.**

Director for undergraduate studies

**Lindsay Freeman**

Undergraduate adviser

envsadvising@vcu.edu

ces.vcu.edu (<http://ces.vcu.edu>)

The undergraduate and graduate programs in environmental studies are interdisciplinary in nature, exposing students to the critical links between the areas of environmental life sciences, technology and policy.

At the undergraduate level, students gain the necessary skills for entry-level field and research positions. Class lectures and guest speakers introduce the importance of policy-making and awareness in the environmental field, while laboratory and internship experiences provide a working knowledge of the latest in environmental technology and field practices.

The graduate programs provide two options for students to further their studies in the environmental life sciences. The Master of Science in Environmental Studies is a thesis-based program designed for those individuals interested pursuing research in the environmental field. The Master of Environmental Studies (the non-thesis program) is a terminal, two-year professional degree for individuals working in the private/public sector of the environmental field.

- Environmental Studies, Bachelor of Science (B.S.) (p. 488)
- Accelerated Bachelor of Science (B.S.) and Master of Environmental Studies (M. Envs.) (p. 489)
- Environmental studies, minor in (p. 490)

## Environmental Studies, Bachelor of Science (B.S.)

The Bachelor of Science in Environmental Studies requires a minimum of 120 credits.

Along with the general education requirements of VCU Life Sciences, this curriculum requires 32-33 credits in core science and mathematics courses and 37-38 credits in environmental studies core courses.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Demonstrate comprehension of basic biological concepts and their integration
- Demonstrate comprehension of basic earth science concepts and their integration
- Demonstrate comprehension of basic ecological concepts and their integration
- Relate the principles of environmental science and policy
- Use basic environmental skills within the research process

## Special requirements

The Bachelor of Science in Environmental Studies requires a minimum 2.0 cumulative average in all major course work.

## Degree requirements for Environmental Studies, Bachelor of Science (B.S.)

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4
Total Hours		21-24

#### Additional general education requirements

LFSC 301	Integrative Life Sciences Research	3
STAT 210	Basic Practice of Statistics	3
or STAT 212	Concepts of Statistics	
Completion of a foreign language through the 102 level or an equivalent course or by placement		0-8
Total Hours		6-14

### Collateral requirements

ENVS 201	Earth System Science (satisfies University Core natural/ physical sciences)	3
----------	---	---

### Major requirements

BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
BIOL 317	Ecology	3
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry and General Chemistry Laboratory II	4
ECON 325	Environmental Economics	3
Select one of the following:		4
ENVS 105 & ENVZ 105	Physical Geology and Physical Geology Laboratory	
URSP 204 & URSZ 204	Physical Geography: Geomorphology and Soils and Physical Geography Laboratory: Geomorphology and Soils	
ENVS/POLI 311	Politics of the Environment	3
ENVS 330/BIOL 332	Environmental Pollution	3
ENVS 335 & ENVZ 335	Environmental Geology and Environmental Geology Laboratory	4

ENVS 401	Meteorology and Climatology	3
ENVS 411	Oceanography	3
ENVS 490	Research Seminar in Environmental Studies (capstone)	3
MATH 151	Precalculus Mathematics	4
PHYS 201	General Physics	4-5
or PHYS 207	University Physics I	
PHYS 202	General Physics	4-5
or PHYS 208	University Physics II	
SOCY/POLI 320	Research Methods in the Social Sciences	3
STAT 314	Applications of Statistics	4
Select one additional environmental studies course chosen with adviser's approval		3
Total Hours		67-69

## Open electives

Select 14-27 open elective credits 14-27

## Total minimum requirement 120 credits

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
CHEM 100	Introductory Chemistry	3
ENVS 201	Earth System Science (satisfies University Core natural/physical sciences)	3
MATH 141	Algebra with Applications	3
POLI 103	U.S. Government (satisfies University Core social/behavioral sciences)	3
UNIV 111	Focused Inquiry I	3
Term Hours:		15

### Spring semester

BIOL 151	Introduction to Biological Sciences I	4
& BIOZ 151	and Introduction to Biological Science Laboratory I	
CHEM 101	General Chemistry	4
& CHEZ 101	and General Chemistry Laboratory I	
MATH 151	Precalculus Mathematics (satisfies University Core quantitative literacy)	4
UNIV 112	Focused Inquiry II	3
Term Hours:		15

### Sophomore year

Fall semester		Hours
BIOL 152	Introduction to Biological Sciences II	4
& BIOZ 152	and Introduction to Biological Science Laboratory II	
CHEM 102	General Chemistry	4
& CHEZ 102	and General Chemistry Laboratory II	
UNIV 200	Inquiry and the Craft of Argument	3
Foreign language (101-level)		4
Term Hours:		15

### Spring semester

BIOL 317	Ecology	5
& BIOZ 317	and Ecology Laboratory	
ENGL 215	Textual Analysis (satisfies University Core humanities/fine arts)	3
LFSC 301	Integrative Life Sciences Research	3
Foreign language (102-level)		4
Term Hours:		15

### Junior year

#### Fall semester

ENVS 105	Physical Geology	4
& ENVZ 105	and Physical Geology Laboratory	
ENVS 330	Environmental Pollution	3
or BIOL 332	or Environmental Pollution	
PHYS 201	General Physics	4
STAT 210	Basic Practice of Statistics	3
Term Hours:		14

#### Spring semester

ECON 325	Environmental Economics	3
ENVS 311	Politics of the Environment	3
or POLI 311	or Politics of the Environment	
PHYS 202	General Physics	4
ENVS 335	Environmental Geology	4
& ENVZ 335	and Environmental Geology Laboratory	
Term Hours:		14

### Senior year

#### Fall semester

ENVS 490	Research Seminar in Environmental Studies	3
SOCY 320	Research Methods in the Social Sciences	3
or POLI 320	or Research Methods in the Social Sciences	
STAT 314	Applications of Statistics	4
Open electives		6
Term Hours:		16

#### Spring semester

ENVS 401	Meteorology and Climatology	3
ENVS 411	Oceanography	3
Open electives		10
Term Hours:		16
Total Hours:		120

## Accelerated Bachelor of Science (B.S.) and Master of Environmental Studies (M. Envs.)

The accelerated B.S. and M.Envs. Program allows qualified students with a major in environmental studies to earn both degrees in five years by completing approved graduate courses during the senior years of their undergraduate program. The program will provide students with the opportunity to expand and deepen their knowledge of environmental studies while enhancing their professional credentials for the job market. Students in the program may count up to 12 hours of graduate courses toward both the B.S. and M.Envs. degrees. Thus, the student may earn

the two degrees with a minimum of 141 hours. Currently, the M.Envs. Program requires students to earn 33 graduate credits.

The accelerated program is restricted to students who have demonstrated strong interest and success in environmental studies. The minimum qualification for admittance to the program is the completion of 90 undergraduate credit hours with an overall GPA of 3.0 and a GPA of 3.3 in the environmental studies major concentration. Students also are required to provide a letter of recommendation from at least one of their major professors attesting to their interest and competence in environmental studies.

Students failing to meet the minimum standards for admission to the accelerated program due to exceptional circumstances will be allowed to appeal to the environmental studies graduate admissions committee for special admission. However, under no circumstances will students who fail to meet the graduate student standards of performance outlined in the Graduate Bulletin be admitted to the accelerated program.

The environmental studies undergraduate and graduate studies program directors jointly will provide guidance for students who are accepted into the accelerated program. This guidance will include a review of all of the program degree requirements, both graduate and undergraduate, and the development of an appropriate plan of study.

The requirements for the B.S. in Environmental Studies and the Master of Environmental Studies are not reduced by the accelerated program. However, 12 hours of graduate course work may be applied toward both degrees for qualified students in the program. The table below outlines the undergraduate requirements that would be fulfilled by the corresponding graduate courses. Where special circumstances exist (e.g., student has already completed a fulfilled course prior to applying to the accelerated program), another undergraduate requirement may be fulfilled by the listed graduate course with the approval of both the graduate and undergraduate program directors.

## Accelerated B.S.-M.Envs. allowable graduate courses and undergraduate credits

### Accelerated B.S.-M.Envs. allowable graduate courses and undergraduate credits

Shared graduate class	Undergraduate requirements fulfilled	Credits
STAT 543 Statistical Methods I	STAT 314 Applications of Statistics	3
ENVS 550 Ecological Risk Assessment or ENVS 670 Pollution Physiology	ENVS 330 Environmental Pollution	3
ENVS 601 Survey in Environmental Studies	SOCY 320/POLI 320 Research Methods in Social Sciences	3
ENVS elective	ENVS elective	3

### Approved graduate electives

ENVS/URSP 521	Introduction to Geographic Information Systems	3
ENVS 591	Topics in Environmental Studies	1-3
ENVS 602	Environmental Technology	1-3

ENVS/PADM 628	Environmental Policy and Administration	3
---------------	---	---

Following the completion of the undergraduate requirements, the student may complete the master's degree within one year. The recommended approach would be to complete the hands-on component of the degree (internship or independent study) during the summer following completion of the undergraduate requirements. All additional requirements could then be completed in two nine-hour semesters. However, students may also opt to postpone the hands-on component of the degree until the summer following the completion of all graduate course work.

## Environmental studies, minor in

The minor in environmental studies provides an overview of the field that offers an intrinsically interesting way for many students to organize elective course work while gaining knowledge important to life in the contemporary world. This program is structured to provide a multidisciplinary introduction to biophysical and social factors that affect the quality of life through the study of the scientific knowledge, policy considerations and ethical issues that constitute environmental issues. When combined with the appropriate major, an environmental studies minor can be useful to students planning careers in any area concerned with environmental processes and problems. The minor also may prepare students for study at the graduate level in such concentrations as ecology and environmental systems.

The minor in environmental studies consists of 24 credits. Required courses are listed. Electives to complete the minor may be selected from ENVS-listed courses and from courses in related departments. Consult the environmental studies program coordinator or adviser for course approvals. At least one course must be taken from the natural sciences and one course from the social sciences. Of the 24 credits, 18 must be outside the student's major department. Twelve credits must be at the 300 level or higher.

## Required courses for the minor

### Required courses

ECON 325	Environmental Economics	3
ENVS/POLI 311	Politics of the Environment	3
ENVS 490	Research Seminar in Environmental Studies	3
STAT 210 or SCMA 301	Basic Practice of Statistics Business Statistics I	3

### Electives

Approved ENVS or related courses <sup>1</sup>	12
Total Hours	24

<sup>1</sup> Consult program coordinator or adviser for course approvals.

## Center for the Study of Biological Complexity

**Gregory A. Buck, Ph.D.**  
Director

[csbc.vcu.edu](http://csbc.vcu.edu) (<http://csbc.vcu.edu>)

The Center for the Study of Biological Complexity is a multidisciplinary focus of research and scholarly activity within VCU Life Sciences. The mission of the center is to apply the principles of complexity to contemporary biological problems in all aspects of research and scholarly activity, supporting research in integrative molecular, cellular and developmental biology.

- Bioinformatics, Bachelor of Science (B.S.) with a concentration in biological/genomic (p. 491)
- Bioinformatics, Bachelor of Science (B.S.) with a concentration in computational (p. 493)
- Bioinformatics, Bachelor of Science (B.S.) with a concentration in quantitative/statistical (p. 496)
- Bioinformatics, accelerated bachelor's to master's (p. 491)

## Bioinformatics, accelerated bachelor's to master's

The accelerated bachelor's to master's program in bioinformatics permits selected students majoring in bioinformatics to earn the Bachelor of Science and master's degrees in a minimum of five years by taking certain graduate level courses during the senior year of their undergraduate program. The program is restricted to students with strong credentials and a clear interest in a career in the field of bioinformatics.

### Admission requirements and procedures

#### Regular admission

In order to be admitted formally into the program through the regular admissions process, a student must be a VCU bioinformatics major, must have completed 90 semester credit hours with an overall GPA of at least 3.0, including a substantial amount of collateral and core course work within the major and evidence of strong academic achievement. An application must be submitted to the Graduate School.

Applicants should indicate which master's degree program (Master of Science in Bioinformatics) is of interest to them. Applications will be screened by the Bioinformatics Admissions Committee. Most students will be able to initiate the application process during the second semester of their junior year. Students provisionally accepted into the program will be notified in time to register for courses as accelerated students but will not be formally admitted into the program until they have completed all requirements listed above.

Following acceptance into the accelerated program, students must continue to meet the requirements stated above throughout the senior year, as well as the graduate student standards of performance specified in this Bulletin in order to be awarded formal acceptance into the graduate program, which typically takes place just prior to the fall semester of the fifth year.

#### Guaranteed admission

The bioinformatics master's program participates in the Honors College Guaranteed Admission Program. This program allows highly qualified high school seniors who will be participating in the VCU Honors College to gain admission into selected VCU graduate programs without competing for that admission at a later date. In order to apply for guaranteed admission, the student must have obtained a combined

score of 1910, in a single sitting, on the SATI, with neither score below 530, and have achieved a minimum 3.5 unweighted GPA (4.0 scale). Once accepted into the Guaranteed Admission Program, bioinformatics students must fulfill the requirements of the Honors College for graduation with University Honors, maintain a cumulative GPA of 3.5, progress satisfactorily in honors courses and meet course requirements of the bioinformatics graduate program in order to remain exempt from competing for admission into the master's program. Guaranteed admission applicants will be screened by the Bioinformatics Admissions Committee.

### Shared credits for accelerated program

BNFO 620	Bioinformatics Practicum <sup>1</sup>	3
or BNFO 508	Introduction to Bioinformatics Research	
Course work taken to meet master's cross-track requirements replaces undergraduate program electives		6
A graduate course within the track replaces a BS-track required (if approved by adviser) or elective course		3
Total Hours		12

<sup>1</sup> For accelerated program students, BNFO 620 or BNFO 508 replaces BNFO 420 to meet the "oral communication" general education requirement. See adviser for appropriate course relative to thesis or non-thesis option in master's program.

## Bioinformatics, Bachelor of Science (B.S.) with a concentration in biological/genomic

This bioinformatics program consists of a core curriculum that provides the basics of biology, chemistry, computer science and statistics, as well as an introduction to the field of bioinformatics. The bachelor's program in bioinformatics requires breadth of training via VCU Life Sciences' general education requirements, specific training in the collateral course work and bioinformatics core, and focused training in the areas of biology/genomics, computational science or quantitative/statistical bioinformatics through the concentration-specific courses.

Students wishing to pursue the bioinformatics major must apply for admission into the program. High school seniors as well as students transferring to VCU should follow the regular VCU admissions process and deadlines, being sure to indicate clearly in their application that they wish to apply to the bioinformatics program. Continuing VCU students wishing to apply to the program will find information about the application process at [csbc.vcu.edu/bioinformatics-programs/](http://csbc.vcu.edu/bioinformatics-programs/) undergraduate (<http://www.csbc.vcu.edu/bioinformatics-programs/undergraduate>) or by calling the director of undergraduate curricula at (804) 828-0559 or the Center for the Study of Biological Complexity at (804) 827-0026.

Transfer students and continuing VCU students with at least 15 college credits should present a suggested college GPA of 3.0 including relevant course work in science, math or computer science.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Present scientific results, both orally and in writing, in a way that makes clear to an appropriate target audience the distinction

between what is known (and how) and what is merely suspected between an observation and a conclusion in a way that tells a compelling story

- Will have demonstrated fundamental knowledge of the basic concepts of biology (particularly molecular biology), the physical sciences, mathematics, statistics and computational science and the ability to apply that knowledge within the context of bioinformatics
- Will have demonstrated an ability to identify and analyze bioinformatics problems and strategies to solve said problems
- Will possess an appropriate level of technical knowledge and ability necessary to address a scientific problem by exploiting biological software and datasets and creating simple bioinformatics tools
- Will have demonstrated an ability to identify and access relevant scientific literature and draw from it in a meaningful and critical manner

## Degree requirements for Bioinformatics, Bachelor of Science (B.S.) with a concentration in biological/genomic

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4

#### General education requirements

LFSC 301	Integrative Life Sciences Research	3
MATH 151	Precalculus Mathematics (fulfills University Core quantitative literacy)	4
Select one of the following:		3
STAT 212	Concepts of Statistics (preferred)	
STAT 210	Basic Practice of Statistics (with program approval)	
Foreign language through 102 level or equivalent course or by placement testing		0-8

Total Hours 27-38

### Collateral requirements

MATH 200	Calculus with Analytic Geometry	4
Select one of the following:		4-5
PHYS 207	University Physics I (preferred)	
PHYS 201	General Physics (may be substituted with program approval)	
Total Hours		8-9

### Major core requirements

BIOL 151	Introduction to Biological Sciences I	3
BIOL 152	Introduction to Biological Sciences II	3
BIOL 300	Cellular and Molecular Biology	3
BNFO 201	Computing Skills and Concepts for Bioinformatics	3

Select one of the following: 2

BNFO/LFSC 251	Phage Discovery I (preferred)	
BIOZ 151	Introduction to Biological Science Laboratory I (with program approval)	

Select one of the following: 2

BNFO/LFSC 252	Phage Discovery II (preferred)	
BIOZ 152	Introduction to Biological Science Laboratory II (with program approval)	

BNFO 300	Molecular Biology Through Discovery	3
BNFO 301/BIOL 351	Introduction to Bioinformatics	3
BNFO 420	Applications in Bioinformatics (University Core capstone)	3
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102	General Chemistry	3
CHEM 301	Organic Chemistry	3
CMSC 255	Introduction to Programming	4
STAT 314 or STAT 321	Applications of Statistics Introduction to Statistical Computing	4

Total Hours 43

### Concentration-required courses

BIOL/BNFO 541 or BIOZ 476	Laboratory in Molecular Genetics Biology Capstone Laboratory	2
BNFO/BIOL 540	Fundamentals of Molecular Genetics	3
CHEM 302	Organic Chemistry	3
CHEM 403	Biochemistry I	3
Total Hours		11

### Concentration electives

Select 10 concentration elective credits from the list below 10

### Open electives

Select nine to 21 open elective credits 9-21

## Total minimum requirement 120 credits

#### Concentration electives

BIOL 310	Genetics	3
BIOZ 310	Laboratory in Genetics	2
BIOL 317	Ecology	3
BIOZ 317	Ecology Laboratory	2
BIOL 455	Immunology	3
BIOL/BNFO 541	Laboratory in Molecular Genetics (if BIOZ 476 was already taken as concentration-required course)	2
BIOZ 476	Biology Capstone Laboratory (if BIOL 541/BNFO 541 was already taken as concentration-required course)	2
BIOL 550	Ecological Genetics	3
BNFO 491	Special Topics in Bioinformatics (variable) <sup>1</sup>	1-4
BNFO 492	Independent Study (variable) <sup>1</sup>	1-4
BNFO 496	Undergraduate Teaching Assistantship in Bioinformatics	1-2



BNFO 497	Research and Thesis (variable) <sup>1</sup>	1-4
CHEZ 301	Organic Chemistry Laboratory I	2
CHEZ 302	Organic Chemistry Laboratory II	2
CMSC 256	Data Structures and Object Oriented Programming	3
HGEN/BIOL 516	Population Genetics	3
MATH 211	Mathematical Structures	3
MICR 515	Principles of Molecular Microbiology	3

<sup>1</sup> May be taken only with adviser's permission

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

Fall semester		Hours
BIOL 151	Introduction to Biological Sciences I	3
BNFO 251 or LFSC 251	Phage Discovery I or Phage Discovery I	2
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Term Hours:		13

#### Spring semester

BIOL 152	Introduction to Biological Sciences II	3
BNFO 252 or LFSC 252	Phage Discovery II or Phage Discovery II	2
CHEM 102	General Chemistry	3
CHEZ 102	General Chemistry Laboratory II (fulfills open elective; also prerequisite for concentration elective CHEZ 301)	1
UNIV 112	Focused Inquiry II	3
Open elective		3
Term Hours:		15

#### Sophomore year

Fall semester		Hours
BIOL 300	Cellular and Molecular Biology	3
BNFO 201	Computing Skills and Concepts for Bioinformatics	3
BNFO 300	Molecular Biology Through Discovery	3
MATH 151	Precalculus Mathematics (approved quantitative literacy, University Core Curriculum Tier II)	4
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		16

#### Spring semester

BNFO 301 or BIOL 351	Introduction to Bioinformatics or Introduction to Bioinformatics	3
CHEM 301	Organic Chemistry	3

ENVS 201	Earth System Science or other approved natural/physical sciences <sup>(University Core Curriculum Tier II</sup></sup>	3
LFSC 301	Integrative Life Sciences Research	3
MATH 200	Calculus with Analytic Geometry	4

Term Hours: 16

#### Junior year

##### Fall semester

BNFO 492	Independent Study (or other concentration elective)	3
CHEM 302	Organic Chemistry	3
STAT 212	Concepts of Statistics	3
Approved humanities/fine arts (University Core Curriculum Tier II)		3
Open elective		3

Term Hours: 15

##### Spring semester

CMSC 255	Introduction to Programming	4
Approved social/behavioral sciences (University Core Curriculum Tier II)		3
Concentration elective		3
Select one of the following:		5
PHYS 207	University Physics I (preferred)	5
PHYS 201	General Physics (may be substituted with program approval)	4

Term Hours: 15

#### Senior year

##### Fall semester

BIOL 540 or BNFO 540	Fundamentals of Molecular Genetics or Fundamentals of Molecular Genetics	3
CHEM 403	Biochemistry I	3
STAT 321 or STAT 314	Introduction to Statistical Computing or Applications of Statistics	3-4
Open electives or foreign language		6

Term Hours: 15-16

##### Spring semester

BIOL 476 or BIOL 541 or BNFO 541	Biology Capstone Laboratory or Laboratory in Molecular Genetics or Laboratory in Molecular Genetics	2
BNFO 420	Applications in Bioinformatics (University Core capstone)	3
Concentration elective		4
Open electives or foreign language		6

Term Hours: 15

Total Hours: 120-121

## Bioinformatics, Bachelor of Science (B.S.) with a concentration in computational

This bioinformatics program consists of a core curriculum that provides the basics of biology, chemistry, computer science and statistics, as well

as an introduction to the field of bioinformatics. The bachelor's program in bioinformatics requires breadth of training via VCU Life Sciences' general education requirements, specific training in the collateral course work and bioinformatics core, and focused training in the areas of biology/genomics, computational science or quantitative/statistical bioinformatics through the concentration-specific courses.

Students wishing to pursue the bioinformatics major must apply for admission into the program. High school seniors as well as students transferring to VCU should follow the regular VCU admissions process and deadlines, being sure to indicate clearly in their application that they wish to apply to the bioinformatics program. Continuing VCU students wishing to apply to the program will find information about the application process at [csbc.vcu.edu/bioinformatics-programs/undergraduate](http://csbc.vcu.edu/bioinformatics-programs/undergraduate) (<http://www.csbc.vcu.edu/bioinformatics-programs/undergraduate>) or by calling the director of undergraduate curricula at (804) 828-0559 or the Center for the Study of Biological Complexity at (804) 827-0026.

Transfer students and continuing VCU students with at least 15 college credits should present a suggested college GPA of 3.0 including relevant course work in science, math or computer science.

## Learning outcomes

**Upon completing this program, students will know and know how to do the following:**

- Present scientific results, both orally and in writing, in a way that makes clear to an appropriate target audience the distinction between what is known (and how) and what is merely suspected between an observation and a conclusion in a way that tells a compelling story
- Will have demonstrated fundamental knowledge of the basic concepts of biology (particularly molecular biology), the physical sciences, mathematics, statistics and computational science and the ability to apply that knowledge within the context of bioinformatics
- Will have demonstrated an ability to identify and analyze bioinformatics problems and strategies to solve said problems
- Will possess an appropriate level of technical knowledge and ability necessary to address a scientific problem by exploiting biological software and datasets and creating simple bioinformatics tools
- Will have demonstrated an ability to identify and access relevant scientific literature and draw from it in a meaningful and critical manner

## Degree requirements for Bioinformatics, Bachelor of Science (B.S.) with a concentration in computational

### General Education requirements

**University Core Education Curriculum (minimum 21 credits)**

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4

### General education requirements

LFSC 301	Integrative Life Sciences Research	3
MATH 151	Precalculus Mathematics (fulfills University Core quantitative literacy)	4
Select one of the following:		3
STAT 212	Concepts of Statistics (preferred)	
STAT 210	Basic Practice of Statistics (with program approval)	
Foreign language through 102 level or equivalent course or by placement testing		0-8
Total Hours		27-38

### Collateral requirements

MATH 200	Calculus with Analytic Geometry	4
Select one of the following:		4-5
PHYS 207	University Physics I (preferred)	
PHYS 201	General Physics (may be substituted with program approval)	
Total Hours		8-9

### Major core requirements

BIOL 151	Introduction to Biological Sciences I	3
BIOL 152	Introduction to Biological Sciences II	3
BIOL 300	Cellular and Molecular Biology	3
BNFO 201	Computing Skills and Concepts for Bioinformatics	3
Select one of the following:		2
BNFO/LFSC 251	Phage Discovery I (preferred)	
BIOZ 151	Introduction to Biological Science Laboratory I (with program approval)	
Select one of the following:		2
BNFO/LFSC 252	Phage Discovery II (preferred)	
BIOZ 152	Introduction to Biological Science Laboratory II (with program approval)	
BNFO 300	Molecular Biology Through Discovery	3
BNFO 301/BIOL 351	Introduction to Bioinformatics	3
BNFO 420	Applications in Bioinformatics (University Core capstone)	3
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
CHEM 102	General Chemistry	3
CHEM 301	Organic Chemistry	3
CMSC 255	Introduction to Programming	4
STAT 314 or STAT 321	Applications of Statistics or Introduction to Statistical Computing	3-4
Total Hours		42-43

### Concentration-required courses

CMSC 256	Data Structures and Object Oriented Programming	3
CMSC 302	Introduction to Discrete Structures	3
CMSC 355	Software Engineering: Specification and Design	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3

MATH 211	Mathematical Structures	3
Total Hours		15

## Concentration electives

Select six concentration elective credits from the list below

## Open electives

Select nine to 24 open elective credits

## Total minimum requirement 120 credits

### Concentration electives

BNFO 491	Special Topics in Bioinformatics (variable) <sup>1</sup>	1-4
BNFO 492	Independent Study (variable) <sup>1</sup>	1-4
BNFO 496	Undergraduate Teaching Assistantship in Bioinformatics	1-2
BNFO 497	Research and Thesis (variable) <sup>1</sup>	1-4
BNFO/BIOL 540	Fundamentals of Molecular Genetics	3
BNFO 591	Special Topics in Bioinformatics	1-4
CMSC 409	Artificial Intelligence	3
CMSC 411	Computer Graphics	3
CMSC 508	Database Theory	3

<sup>1</sup> May be taken only with adviser's permission

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

### Freshman year

Fall semester		Hours
BIOL 151	Introduction to Biological Sciences I	3
BNFO 201	Computing Skills and Concepts for Bioinformatics	3
BNFO 251 or LFSC 251	Phage Discovery I or Phage Discovery I	2
MATH 151	Precalculus Mathematics (approved quantitative literacy, University Core Curriculum Tier II)	4
UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Term Hours:		16

### Spring semester

BIOL 152	Introduction to Biological Sciences II	3
BNFO 252 or LFSC 252	Phage Discovery II or Phage Discovery II	2
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
MATH 200	Calculus with Analytic Geometry	4
UNIV 112	Focused Inquiry II	3
Term Hours:		16

### Sophomore year

Fall semester		Hours
BNFO 300	Molecular Biology Through Discovery	3

CHEM 102	General Chemistry	3
CMSC 255	Introduction to Programming	4
MATH 211	Mathematical Structures	3
Term Hours:		13

### Spring semester

BIOL 300	Cellular and Molecular Biology	3
BNFO 301 or BIOL 351	Introduction to Bioinformatics or Introduction to Bioinformatics	3
CMSC 256	Data Structures and Object Oriented Programming	3
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		12

### Junior year

#### Fall semester

CHEM 301	Organic Chemistry	3
CMSC 302	Introduction to Discrete Structures	3
ENVS 201	Earth System Science (or other approved natural/physical sciences course <sup>University Core Curriculum Tier II</sup>)	3
LFSC 301	Integrative Life Sciences Research	3
Approved humanities/fine arts course (University Core Curriculum Tier II)		3
Term Hours:		15

#### Spring semester

CMSC 355	Software Engineering: Specification and Design	3
STAT 212	Concepts of Statistics	3
Approved social/behavioral sciences (University Core Curriculum Tier II)		3
Concentration elective		3
Select one of the following:		5
PHYS 207	University Physics I (preferred)	5
PHYS 201	General Physics (may be substituted with program approval)	4
Term Hours:		17

### Senior year

#### Fall semester

BNFO 492	Independent Study (or other concentration elective)	3
CMSC 401	Algorithm Analysis with Advanced Data Structures	3
STAT 321 or STAT 314	Introduction to Statistical Computing or Applications of Statistics	3-4
Open elective		3
Open elective or foreign language		3
Term Hours:		15-16

#### Spring semester

BNFO 420	Applications in Bioinformatics (University Core capstone)	3
Open elective or foreign language		3

Open electives	10
Term Hours:	16
Total Hours:	120-121

## Bioinformatics, Bachelor of Science (B.S.) with a concentration in quantitative/statistical

This bioinformatics program consists of a core curriculum that provides the basics of biology, chemistry, computer science and statistics, as well as an introduction to the field of bioinformatics. The bachelor's program in bioinformatics requires breadth of training via VCU Life Sciences' general education requirements, specific training in the collateral course work and bioinformatics core, and focused training in the areas of biology/genomics, computational science or quantitative/statistical bioinformatics through the concentration-specific courses.

Students wishing to pursue the bioinformatics major must apply for admission into the program. High school seniors as well as students transferring to VCU should follow the regular VCU admissions process and deadlines, being sure to indicate clearly in their application that they wish to apply to the bioinformatics program. Continuing VCU students wishing to apply to the program will find information about the application process at [csbc.vcu.edu/bioinformatics-programs/undergraduate](http://www.csbc.vcu.edu/bioinformatics-programs/undergraduate) (<http://www.csbc.vcu.edu/bioinformatics-programs/undergraduate>) or by calling the director of undergraduate curricula at (804) 828-0559 or the Center for the Study of Biological Complexity at (804) 827-0026.

Transfer students and continuing VCU students with at least 15 college credits should present a suggested college GPA of 3.0 including relevant course work in science, math or computer science.

### Learning outcomes

Upon completing this program, students will know and know how to do the following:

- Present scientific results, both orally and in writing, in a way that makes clear to an appropriate target audience the distinction between what is known (and how) and what is merely suspected between an observation and a conclusion in a way that tells a compelling story
- Will have demonstrated fundamental knowledge of the basic concepts of biology (particularly molecular biology), the physical sciences, mathematics, statistics and computational science and the ability to apply that knowledge within the context of bioinformatics
- Will have demonstrated an ability to identify and analyze bioinformatics problems and strategies to solve said problems
- Will possess an appropriate level of technical knowledge and ability necessary to address a scientific problem by exploiting biological software and datasets and creating simple bioinformatics tools
- Will have demonstrated an ability to identify and access relevant scientific literature and draw from it in a meaningful and critical manner

## Degree requirements for Bioinformatics, Bachelor of Science (B.S.) with a concentration in quantitative/statistical

### General Education requirements

#### University Core Education Curriculum (minimum 21 credits)

UNIV 111	Focused Inquiry I	3
UNIV 112	Focused Inquiry II	3
UNIV 200	Inquiry and the Craft of Argument	3
Approved humanities/fine arts		3
Approved natural/physical sciences		3-4
Approved quantitative literacy		3-4
Approved social/behavioral sciences		3-4

#### General education requirements

LFSC 301	Integrative Life Sciences Research	3
MATH 151	Precalculus Mathematics (fulfills University Core quantitative literacy)	4
Select one of the following:		3
STAT 212	Concepts of Statistics (preferred)	
STAT 210	Basic Practice of Statistics (with program approval)	
Foreign language through 102 level or equivalent course or by placement testing		0-8
Total Hours		27-38

### Collateral requirements

MATH 200	Calculus with Analytic Geometry	4
Select one of the following:		4-5
PHYS 207	University Physics I (preferred)	
PHYS 201	General Physics (may be substituted with program approval)	
Total Hours		8-9

### Major core requirements

BIOL 151	Introduction to Biological Sciences I	3
BIOL 152	Introduction to Biological Sciences II	3
BIOL 300	Cellular and Molecular Biology	3
BNFO 201	Computing Skills and Concepts for Bioinformatics	3
Select one of the following:		2
BNFO/LFSC 251	Phage Discovery I (preferred)	
BIOZ 151	Introduction to Biological Science Laboratory I (with program approval)	
Select one of the following:		2
BNFO/LFSC 252	Phage Discovery II (preferred)	
BIOZ 152	Introduction to Biological Science Laboratory II (with program approval)	
BNFO 300	Molecular Biology Through Discovery	3
BNFO 301/BIOL 351	Introduction to Bioinformatics	3
BNFO 420	Applications in Bioinformatics (University Core capstone)	3
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4

CHEM 102	General Chemistry	3
CHEM 301	Organic Chemistry	3
CMSC 255	Introduction to Programming	4
STAT 314	Applications of Statistics	4
Total Hours		43

### Concentration-required courses

MATH 201	Calculus with Analytic Geometry	4
MATH 307	Multivariate Calculus	4
MATH 310	Linear Algebra	3
STAT 321	Introduction to Statistical Computing	3
Total Hours		14

### Open electives

Select five to 20 open elective credits 5-20

### Total minimum requirement 120 credits

#### Concentration electives

BIOS/STAT 513	Mathematical Statistics I	3
BIOS/STAT 514	Mathematical Statistics II	3
BIOS 524	Biostatistical Computing	3
BIOS/STAT 543	Statistical Methods I	3
BIOS/STAT 544	Statistical Methods II	3
BIOS 546	Theory of Linear Models	3
BNFO/MATH/BIOL 380	Introduction to Mathematical Biology	4
BNFO 491	Special Topics in Bioinformatics (variable) <sup>1</sup>	1-4
BNFO 492	Independent Study (variable) <sup>1</sup>	1-4
BNFO 496	Undergraduate Teaching Assistantship in Bioinformatics	1-2
BNFO 497	Research and Thesis (variable) <sup>1</sup>	1-4
BNFO/BIOL 540	Fundamentals of Molecular Genetics	3
CMSC 256	Data Structures and Object Oriented Programming	3
MATH 211	Mathematical Structures	3
STAT/MATH 309	Introduction to Probability Theory	3
STAT 421	Applied Statistical Computing Using R	3
STAT 441	Applied Statistics for Engineers and Scientists	3

<sup>1</sup> May be taken only with adviser's permission

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

#### Freshman year

##### Fall semester

BIOL 151	Introduction to Biological Sciences I	3
BNFO 251 or LFSC 251	Phage Discovery I or Phage Discovery I	2
MATH 151	Precalculus Mathematics (approved quantitative literacy, University Core Curriculum Tier II)	4

Hours

UNIV 101	Introduction to the University	1
UNIV 111	Focused Inquiry I	3
Open elective		3
Term Hours:		16

##### Spring semester

BIOL 152	Introduction to Biological Sciences II	3
BNFO 252 or LFSC 252	Phage Discovery II or Phage Discovery II	2
CHEM 101 & CHEZ 101	General Chemistry and General Chemistry Laboratory I	4
MATH 200	Calculus with Analytic Geometry	4
UNIV 112	Focused Inquiry II	3
Term Hours:		16

#### Sophomore year

##### Fall semester

BNFO 201	Computing Skills and Concepts for Bioinformatics	3
BNFO 300	Molecular Biology Through Discovery	3
CHEM 102	General Chemistry	3
MATH 201	Calculus with Analytic Geometry	4
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		16

##### Spring semester

BIOL 300	Cellular and Molecular Biology	3
BNFO 301 or BIOL 351	Introduction to Bioinformatics or Introduction to Bioinformatics	3
ENVS 201	Earth System Science (or other approved natural/physical sciences course <sup>University Core Curriculum Tier II</sup>)	3
MATH 307	Multivariate Calculus	4
STAT 212	Concepts of Statistics	3
Term Hours:		16

#### Junior year

##### Fall semester

BNFO 492	Independent Study (or other concentration elective)	4
CHEM 301	Organic Chemistry	3
LFSC 301	Integrative Life Sciences Research	3
MATH 310	Linear Algebra	3
Term Hours:		13

##### Spring semester

CMSC 255	Introduction to Programming	4
STAT 314	Applications of Statistics	4
Approved humanities/fine arts course (University Core Curriculum Tier II)		3
Select one of the following:		5
PHYS 207	University Physics I (preferred)	5
PHYS 201	General Physics (may be substituted with program approval)	4
Term Hours:		16

#### Senior year



**Fall semester**

STAT 321	Introduction to Statistical Computing	3
Approved social/behavioral sciences course (University Core Curriculum Tier II)		3
Concentration elective		3
Open elective or foreign language		3

---

Term Hours: 12

**Spring semester**

BNFO 420	Applications in Bioinformatics (University Core capstone)	3
Open elective or foreign language		3
Open electives		9

---

Term Hours: 15

---

Total Hours: 120

Students will complete the Certificate in Sustainable Innovation by fulfilling a 400-level directed research project/independent study or internship. The project or internship may be in any discipline, but a proposal must be approved in advance by the director of the certificate program as meeting the learning outcomes for the certificate.

**Additional requirements**

Students in the certificate program will be required to maintain a portfolio for the duration of the program in which they will summarize their elective courses and describe how each course meets the goals of the certificate program. The portfolio also will include a product from their culminating practical experience.

## Sustainable Innovation, Certificate in (Undergraduate certificate)

The Certificate in Sustainable Innovation is designed to provide students in any VCU baccalaureate program the option of adding a formal certificate program in sustainability and sustainable approaches to problem-solving (see VCU sustainability definition at [vcugoesgreen.vcu.edu/about/statement.html](http://vcugoesgreen.vcu.edu/about/statement.html) (<http://www.vcugoesgreen.vcu.edu/about/statement.html>)). The Certificate in Sustainable Innovation will use a systems-thinking approach to problems of sustainability across all of the academic disciplines.

### Admissions

Applications are available through the Center for Environmental Studies [Trani Center for Life Sciences, Room 105; (804) 828-7202]. Completed applications must be received by March 15 of each year.

Admission requires a minimum 2.8 grade point average. Students with fewer than 60 credits will be given priority for admission to the certificate program. Provided, however, transfer students may apply during their first year of admission to VCU and will receive equal priority to applicants with fewer than 60 credits. For transfer students, grade point average will be a compilation of grade points from transfer credits and courses taken at VCU.

Applicants are required to include a 500-word personal statement explaining their interest in the certificate. Applications will be reviewed by at least three members of the Sustainability Academics Leadership Team subcommittee on curriculum. All students meeting the admission requirements will be placed in a lottery to fill available positions in the program.

### Curriculum

**Gateway course: 3 credits**

ENVS 300 Sustainable Societies: James River Basin

**Sustainability electives: 12 credits**

Students should choose from courses with the sustainability attribute. An updated list of these courses is available from the Center for Environmental Studies or may be accessed each semester by searching the Schedule of Classes with Attribute Type, Sustainability.

**Culminating practical experience: 3 credits**

# UNIVERSITY COLLEGE

Grace E. Harris Hall, Fifth Floor  
1015 Floyd Avenue  
Richmond, Virginia 23284-2015  
(804) 828-6289

uc.vcu.edu (<http://uc.vcu.edu>)

**Shelli B. Fowler, Ph.D.**  
Interim dean

## Mission of the University College

The University College enhances student engagement and success through curricular innovation, interdisciplinary studies and support for excellence in learning.

University College offers first-year students an innovative, cohort-based first-year seminar experience, UNIV 111 and UNIV 112, designed around critical thinking, curiosity and shared learning opportunities. By providing students with a common experience, these courses help make the first year of college more engaging and meaningful, and provide a strong foundation for further learning at VCU and beyond. A third course, UNIV 200, follows this first-year seminar and has a special focus on inquiry and the craft of argument. UNIV 200 empowers students to ask great questions and build well-researched, carefully argued answers in an academic learning context.

University College also offers the Bachelor of Interdisciplinary Studies degree program for students who want to design their own majors, either by combining two minors or by working with B.I.S. and other VCU faculty to build a completely individualized major. A required capstone course, UNIV 499, provides B.I.S. students with a creative, project-based opportunity to bring together all of their varied work within the B.I.S. program.

## Goals and objectives of University College

The goal of the UC is to promote the personal and academic success of each student through curricular innovation, interdisciplinary studies and support for excellence in learning. The objectives are:

- To increase opportunities for active learning through innovative learning opportunities within and beyond the classroom
- To provide an innovative, cohort-based first-year seminar experience for VCU students (UNIV 111 and UNIV 112) as well as a course emphasizing research, argumentation and effective communication in multiple modalities (UNIV 200)
- To provide an individualized majors program, the Bachelor of Interdisciplinary Studies, that offers a creative, rigorous and rewarding learning experience for both traditional and nontraditional students
- To empower students to be self-directed, lifelong learners who will take advantage of every opportunity for learning and support for learning at VCU and beyond

## General information

### Academic departments and degree programs

Focused Inquiry Program

Bachelor of Interdisciplinary Studies (B.I.S.)

## Other programs

- Common Book initiative
- Undergraduate teaching assistants (Focused Inquiry)

## Focused Inquiry

Grace E. Harris Hall, Fifth Floor  
1015 Floyd Avenue  
P.O. Box 84201  
Richmond, Virginia 23284-2015  
(804) 827-0838

**Melissa C. Johnson, Ph.D.**  
Associate professor and chair

**Patricia R. Strong**  
Assistant professor and associate chair

The purpose of the Focused Inquiry program is to cultivate in all VCU students the skills, knowledge and attitudes needed for collegiate and lifelong success through learning-centered experiences; to foster an environment of collaboration among its faculty; and to encourage excellence in the practice and scholarship of teaching and learning. Faculty members are specialists in a range of disciplines and are dedicated to engaging students in curricular material that prepares them to become advanced thinkers in their majors, to be engaged citizens and to thrive as innovative and adaptable professionals.

Focused Inquiry offers small, seminar-style classes for first- and second-year students as the foundation of the Core Curriculum at VCU. All courses are designed to cultivate curiosity and critical thinking through a rigorous, process-oriented shared curriculum grounded in experiential and problem-based learning. First year students in UNIV 111 and UNIV 112 focus on developing skills in written and oral communication, critical thinking, ethical reasoning, information fluency and quantitative reasoning in a collaborative learning environment, remaining with the same classmates and instructor for both courses and exploring a shared course theme. In UNIV 200 students further hone their written communication, critical thinking and information fluency skills by developing an individually designed inquiry project through a semester-long collaborative process of questioning, researching, writing, reflecting and revising in a variety of modalities. The unit also offers five interdisciplinary Tier 2 courses: Food for Thought (UNIV 211), The Truth About Lying (UNIV 213), Finding Your Voice in Contemporary Society (UNIV 217), Pseudoscience (UNIV 222) and What's the Big Idea? (UNIV 299).

## Teaching assistant programs

### Undergraduate teaching assistant program

The undergraduate teaching assistant program (offered in UNIV 250 and UNIV 251) provides successful Focused Inquiry students the opportunity to engage in experiential education and real-world applications of their FI course work through collaboration, mentorship and reflection and to earn service-learning credit. UTAs work in the Focused Inquiry classroom, modeling successful student behavior and adding a crucial layer of support that helps both their students and their faculty mentors.

Upon completing a year of service in the UTA program, UTAs may apply to the peer leadership seminar (offered as UNIV 350). This application-only seminar offers its students a three-fold approach to leadership: They practice leadership through the mentorship they offer UTAs in

the 250/251 sequence; they study leadership through the model of the Richmond metropolitan region; finally, they meet regional leaders.

## Graduate teaching assistant program

The Focused Inquiry GTA program provides VCU graduate students the opportunity to gain valuable teaching experience and professional development. The highly structured program includes mentorship and guidance toward the goal of developing teaching expertise in a two-step process. In the first year of the program, GTAs shadow a course of UNIV 111, UNIV 112 and UNIV 200 with an assigned mentor faculty member. In the second year, GTAs either teach their own section of UNIV 111, UNIV 112 and UNIV 200 or work on a research, professional development or departmental service project under the guidance of a faculty member. As a result, GTAs have a strong track record in the unit as highly committed, effective teachers of the UNIV courses. GTA positions are funded through the Graduate School and the Department of English.

## Interdisciplinary Studies, Bachelor of (B.I.S.) [University College]

**Shelli B. Fowler, Ph.D.**

Director  
(804) 828-6289

**Mary L. Shelden, Ph.D.**

Interim assistant director  
(804) 827-3922

**Pamela Wiegardt, Ed.D.**

Adviser  
(804) 827-8167

[interdisciplinarystudies.vcu.edu](http://interdisciplinarystudies.vcu.edu)

The Bachelor of Interdisciplinary Studies is an individualized and interdisciplinary program for students who wish to create an individualized curriculum not available in traditional majors or existing VCU degree programs. Students in this undergraduate degree program are able to design an individualized degree compatible with academic, career or personal goals.

## The application process

To apply to the B.I.S. program, students should:

- Attend an orientation session or meet with the adviser or assistant director in the B.I.S. program
- Have learning goals that are suited to an interdisciplinary program of study
- Submit an application detailing the proposed course of study, including a rationale for specific learning outcomes

Students apply for nontraditional, individualized and interdisciplinary courses of study by designing their own curricula. The adviser of the B.I.S. program and faculty advisers work closely with students to develop an appropriate curricular program and provide guidance on the application process. With the assistance of the B.I.S. adviser and a designated faculty adviser, students define their educational goals and design their interdisciplinary curricula by drawing on a variety of course offerings. Each student's plan must define a specific focus area that combines two or more areas of study.

The proposed interdisciplinary curriculum plan will be evaluated by the adviser or assistant director of the B.I.S. program and by the B.I.S. program director. Each application will be evaluated based on compliance with university degree requirements as well as B.I.S. curriculum and individualized program requirements. Students will be notified in writing of the dean's decision to accept or deny admission into the program.

After admission to the program, students will follow an approved, individualized curriculum plan. The finalized curriculum plan is the official record of the student's degree requirements. This document records all transfer credits applicable to the B.I.S. degree and lists the courses required to complete the degree.

## Individualized program requirements

### Core education requirements

#### 1. Writing and research

Six credit hours: UNIV 111, UNIV 112 – This two-semester sequence is required of all first-year students and provides the foundation of the Core Education Program. Students begin their Core shared experiences through the summer reading program with follow-through in the FI sequence as they engage in similar assignments and projects both in and out of class.

Three credit hours: a research and academic writing course that emphasizes academic argument, information retrieval, analysis and documentation. UNIV 200 may be used to fill this requirement or an equivalent course designed by the department/school.

#### 2. Quantitative literacy

Three credit hours (minimum) selected from following list of approved courses:

MATH 131	Introduction to Contemporary Mathematics	3
MATH 141	Algebra with Applications	3
MATH 151	Precalculus Mathematics	4
MATH 200	Calculus with Analytic Geometry	4
SCMA 171	Mathematical Applications for Business	3
STAT 208	Statistical Thinking	3

#### 3. Core general education

Nine credits, including one course from each of the following areas:

##### a. Natural/physical sciences

BIOL 101	Biological Concepts	3
BIOL/ENVS 103	Environmental Science	4
CHEM 110	Chemistry and Society	3
ENVS 201	Earth System Science	3
FRSC 202	Crime and Science	3
INSC 201	Energy!	3
PHYS 103	Elementary Astronomy	3

##### b. Humanities/fine arts

ENGL 215	Textual Analysis	3
HIST 201	The Art of Historical Detection: ____	3
HUMS 250	Reading Film	3
MASC/INTL 151	Global Communications	3
PHIL 201	Critical Thinking About Moral Problems	3

PHIL 250	Thinking About Thinking	3
RELS 108	Human Spirituality	3
WRLD/INTL 203	Cultural Texts and Contexts: ____	3
WRLD 230	Introduction to World Cinema	3

c. **Social/behavioral sciences**

ANTH/INTL 103	Introduction to Anthropology	3
ECON 101/INTL 102	Introduction to Political Economy	3
GSWS 201	Introduction to Gender, Sexuality and Women's Studies	3
HUMS 300	Great Questions of the Social Sciences	3
INTL 101	Human Societies and Globalization	3
POLI 103	U.S. Government	3
POLI/INTL 105	International Relations	3
PSYC 101	Introduction to Psychology	4
SOCY 101	Introduction to Sociology	3

4. **Additional general education requirements**

Nine credit hours: Select at least three courses offered by the College of Humanities and Sciences that are not required in the focus area.

5. **Capstone course**

Three credit hours: This requirement may be fulfilled through a service-learning project, a research project with a faculty member, a study abroad program, a senior thesis paper or a practical internship. This requirement ties learned experience in the Core Education Program with a practical application and will be completed through an upper-level course in the student's focus area. Students may use the capstone in either of their minor areas or they can propose a unique capstone appropriate for their focus area.

## Focus area

The individually designed interdisciplinary focus area requires a minimum of 36 semester credits, 24 of which must be upper-level credit. The focus area has to combine at least two areas of study. One way to accomplish this is to complete the requirement for two minors as designated in the Undergraduate Bulletin.

## Electives

Maximum of 57 credits

## Other requirements

The curriculum plan must also meet the following university policies and degree requirements:

- At least 12 credits must be taken in the focus area after acceptance into the program.
- B.I.S majors are required to participate in assessment activities (e.g., focus groups and exit surveys) as determined by the B.I.S. adviser. Assessment information is used to assist faculty in evaluating program effectiveness.
- Students have a variety of credit options, including CLEP examinations, credit for formal military training and credits for certain professional certifications when they do not duplicate college course work.

## Living-learning community programs

VCU offers a number of sponsored living-learning programs at the undergraduate level designed to allow students to enjoy an immersive experience in a particular area and earn a certificate of completion. Through a combination of coordinated interdisciplinary course work, cocurricular activities and a residential experience, over a two-year commitment, students gain a breadth and depth of learning that prepares them to be world-ready.

**VCU ASPIRE** (Academic Scholars in Real Environments) is a two-year, nine-credit program with a focus on community engagement. Students also complete a minimum of 100 hours of cocurricular experiences while in the program.

**VCU Globe** (p. 516), the Global Education living-learning community, offers a curricular focus on global education, engagement and leadership. In addition to other elements, the certificate of completion requires a minimum of nine program-specific credits, with at least 40 hours of service work and attendance at five VCU Globe events each year.

**VCU INNOVATE** uses academic course work and cocurricular activities to enhance the experience of students enrolled in the Certificate in Product Innovation and/or the Certificate in Venture Creation. Students enroll in four one-credit courses over a two-year residency and complete a portfolio in order to fulfill the certificate of completion.

**VCU LEAD** (Leaders Engaging in Advanced Discovery) provides a focus on leadership intended to develop students who will serve as leaders in their fields upon completion of the two-year, 10-credit program. Students will also undertake a minimum of 80 hours of cocurricular activities over the duration of the program.

## VCU Leaders Engaging in Advanced Discovery living-learning program

VCU LEAD is a living-learning program dedicated to the development of current and future leaders through academic course work and cocurricular activities. The vision of VCU LEAD is to cultivate world-class innovative leaders who transform lives and impact communities.

## Certificate of completion

Students who are accepted into VCU LEAD will develop leadership over the course of the two-year program through a prescribed balance of activities and experiences. Students fulfilling the following requirements will be recognized by receiving a Certificate of Completion in Leadership Studies.

- Reside in the Grace and Broad Residence Center for all years of the program
- Maintain a minimum 2.0 cumulative GPA while enrolled in VCU LEAD
- Complete UNIV 200 with a minimum grade of C
- Achieve a minimum 2.5 GPA in required leadership studies courses (LDRS 201, LDRS 202, LDRS 301, LDRS 302 and UNIV 270)
- Demonstrate experience in organizational leadership through engagement in VCU student organizations, student life programs and/or community agencies
- Complete at least 20 leadership hours and 20 hours of service in the community each year
- Attend at least five VCU LEAD events each academic year

- Submit curricular and cocurricular portfolios

The certificate of completion includes an academic component consisting of 10 credit hours of course work to be completed during the two-year VCU LEAD program.

is available to all students. Regular communication with the program leadership is critical to the successful completion of all program requirements.

#### Year one

Fall semester		Hours
LDRS 201	Leadership Identity	1
UNIV 200	Inquiry and the Craft of Argument	3
Term Hours:		4

#### Spring semester

LDRS 202	Leadership Context	1
UNIV 270	Introduction to Leadership Studies	3
Term Hours:		4

#### Year two

Fall semester		Hours
LDRS 301	Leadership Engagement	1
Term Hours:		1

#### Spring semester

LDRS 302	Culminating Leadership Seminar	1
Term Hours:		1
Total Hours:		10

## Application process

Students of all majors with an interest in leadership are sought for admission to the VCU LEAD living-learning program. Full-time students may apply for admission to VCU LEAD during the fall semester of their freshman or sophomore years. Seniors who have two more years of undergraduate studies may petition the director for admission to the program. In addition to completing the admission application for VCU LEAD, students must complete a housing contract to reside in VCU LEAD for two consecutive years.

Successful applicants will demonstrate leadership potential and a commitment to personal and professional growth. The admissions committee will consider the thoroughness and merit of responses to application questions as well as the level of commitment exhibited in the application to actively engage in curricular, cocurricular and residential program elements for the two-year program.

## Certificate completion process

All VCU LEAD scholars must complete the curricular, cocurricular and residential requirements for the Certificate of Completion in Leadership Studies on schedule in the intended progression. Students who fail to satisfy the program requirements, including living in VCU LEAD housing, will be removed from the program. Students failing to meet program requirements also may be removed from VCU LEAD housing and relocated to another residence hall. Students are expected to uphold VCU, VCU LEAD and community partner expectations for personal and professional conduct at all times. Any behavior that violates standards of conduct (<http://www.students.vcu.edu/studentconduct/student-code-of-conduct>) may result in removal from the program and VCU LEAD.

Students who complete all of the above listed requirements will be awarded the Certificate of Completion in Leadership Studies. Program staff members monitor student progress for all VCU LEAD scholars. However, it is the responsibility of each student to monitor their own program of study and seek assistance when needed. A program adviser



# DA VINCI CENTER FOR INNOVATION

807 South Cathedral Place  
Richmond, Virginia 23284  
Phone: (804) 827-3764  
davincicenter.vcu.edu (<http://www.davincicenter.vcu.edu>)

**Garret Westlake**  
Executive director

A collaboration of VCU's schools of the Arts, Business, Engineering and College of Humanities and Sciences, the VCU da Vinci Center is a unique collegiate model that advances innovation and entrepreneurship through cross-disciplinary collaboration.

The academic and other program offerings of the da Vinci Center aim to create T-shaped individuals: individuals who are anchored in a discipline and have the capacity and openness to span across disciplines.

Students participating in the da Vinci Center view innovation and entrepreneurship from multiple disciplinary perspectives and, thus, are prepared for the 21st-century workforce by more robustly approaching the innovation/entrepreneurship endeavor.

- Product Innovation, Certificate in (Undergraduate certificate) (p. 503)
- Venture Creation, Certificate in (Undergraduate certificate) (p. 505)

## VCU INNOVATE

VCU INNOVATE is a living-learning program that promotes student understanding of innovation and entrepreneurship through academic course work and cocurricular activities. The mission of VCU INNOVATE is to spur a mindset and culture that enables students to pursue innovation and entrepreneurship efforts. A multidisciplinary perspective is emphasized so that VCU INNOVATE students are best prepared for the 21st-century economy as they more robustly approach innovation and entrepreneurship endeavors.

## Certificate of completion

Students completing the VCU INNOVATE living-learning program receive a Certificate of Completion in Innovation and Entrepreneurship, which requires a sequence of the following four tailored one credit hour courses over a two-year required residency.

INNO 351	Creativity for Innovation and Entrepreneurship	1
INNO 352	Making Innovation Happen	1
INNO 353	Making Entrepreneurship Happen	1
INNO 450	Realizing Innovation and Entrepreneurship	1

INNO 351 is taken in the first semester and INNO 352 is taken in the second semester of the first year of residency. Students take INNO 353 in the first semester of the second year, with INNO 450 taken the following semester and during which students will complete a portfolio of their learning. VCU INNOVATE students also must be enrolled in VCU's undergraduate Certificate in Product Innovation and/or undergraduate

Certificate in Venture Creation. Both certificates fall under the auspices of the VCU da Vinci Center.

## Program requirements

To remain in VCU INNOVATE, students must:

- Commit to a two-year residency in the Grace and Broad Residence Center
- Complete all academic course work on time for the VCU Certificate in Product Innovation and/or VCU Certificate in Venture Creation
- Complete all academic course work on time for the Certificate of Completion in Innovation and Entrepreneurship

Students not meeting general VCU academic requirements and/or the academic requirements of the aforementioned certificates will be put on warning by the VCU INNOVATE director in collaboration with the student services residence hall office. Failure to comply with VCU INNOVATE residency requirements will lead to dismissal from the VCU INNOVATE living-learning program.

A student dismissed from VCU INNOVATE can still pursue the certificate programs as long as they are in good academic standing with the university and the respective VCU da Vinci Center academic program.

## Application process

Students with professional or personal interests in innovation and entrepreneurship are sought as residents in the VCU INNOVATE living-learning program. Students from all majors are welcome. Only full-time VCU students may apply for the program during their freshman or sophomore years. Rising juniors or seniors who have two more years of undergraduate studies remaining may petition the director for entry. The online application deadline is posted on the VCU INNOVATE website. In addition to completing the admissions application, students must complete a housing contract for the Grace and Broad Residence Center for two consecutive years.

The successful applicant will demonstrate interest, commitment and a passion for innovation and entrepreneurship. Students must apply and be accepted into the Certificate in Product Innovation program and/or Certificate in Venture Creation program.

For more information, contact the VCU INNOVATE living-learning program director at [davincicenter@vcu.edu](mailto:davincicenter@vcu.edu).

## Product Innovation, Certificate in (Undergraduate certificate)

The Certificate in Product Innovation allows undergraduate students to develop competency in the area of product innovation.

Employing a cross-disciplinary perspective that embodies concepts from arts, design, business, engineering, and humanities and sciences, students receive a robust learning experience that leads to an understanding of the challenges associated with and means for managing product design, product development and new-product introduction endeavors.

The Certificate in Product Innovation program runs concurrently with a student's major and is not a stand-alone program. In order to participate in the program, students must have a declared major in the schools of the

Arts, Business, Engineering, the College of Humanities and Sciences, or another VCU unit that is an official partner of the da Vinci Center.

Students will learn how to:

- Collaborate successfully
- Develop product concepts
- Think across disciplines
- Make effective presentations

Students should apply to the program during or after taking the introductory course, INNO 200. Interested students should submit their application to the VCU da Vinci Center which administers the certificate program. Upon acceptance to the certificate program, a Change of Major form will be signed by the student and submitted to Records and Registration by the VCU da Vinci Center.

The certificate requires a minimum of 16 credit hours of approved course work as follows:

INNO 200	Introduction to Innovation and Venture Creation	1
Select two of the following non-discipline electives: <sup>1</sup>		6-9
INNO 221	Introduction to Arts and Design Principles	
INNO 225	Introduction to Engineering and Technology Principles	
One of the following:		
INNO 223	Introduction to Business Principles	
ECON 205	The Economics of Product Development and Markets	
MKTG 301	Marketing Principles	
Select two discipline-specific electives (approved 300- or 400-level courses in the major) <sup>2</sup>		6
INNO 460	Product Innovation: da Vinci Project <sup>2</sup>	3
Total Hours		16-19

<sup>1</sup> Choose the courses offered by the schools outside the major; students from outside the Schools of the Arts, Business, and Engineering must take all three non-discipline electives.

<sup>2</sup> Students may take only one discipline-specific elective course while enrolled in INNO 460.

#### Core discipline electives

School of the Arts		
COAR 311	Type and Image	
COAR 321	Sequential Imaging	
COAR 332	Digital Drawing	
COAR 433	Game Design, Theory and Practice	
COAR 450	Business of Communication Arts	
CRAF 320	Furniture Design	
CRAF 351	Intermediate Glass Fabrication/Hot	
CRAF 362	Intermediate Textiles: Pattern Weaving	
FASH 341	Merchandise Planning and Control	
FASH 343	Fashion Forecasting	
FASH 401	Design II Studio	
& FASH 402	and Design II Studio	

FASH 493	Fashion Internship	
GDES 308	Web Design	
GDES 343	Systems in Design	
GDES 347	Interaction I	
GDES 356	Studio Management	
GDES 418	Design Center	
GDES 492	Design Internship	
IDES 301	Interior Design Studio I	
IDES 312	Advanced Interior Graphics II	
IDES 324	Furniture Design	
IDES 431	ID Business Practices	
IDES 491	Topics in Interior Design	
KINE 308	Web Technologies for Media Artists	
PAPR 321	Drawing, Intermediate	
PAPR 421	Drawing, Advanced	
SCPT 322	Flexible Molds	

School of Business		
ECON 305	Public Finance - State and Local	
MGMT 319	Leadership	
MGMT 321	Survey of Entrepreneurship	
MKTG 310	Information for Marketing Decisions	
MKTG 330	Integrated Marketing Communications	
MKTG 430	Experiential Marketing	
MKTG 450	Product Development and Management	
SCMA 323	Legal Environment of Business	
SCMA 350	Introduction to Project Management	

School of Engineering		
CMSC 355	Software Engineering: Specification and Design	
CMSC 401	Algorithm Analysis with Advanced Data Structures	
EGRB 301	Biomedical Engineering Design Practicum	
EGRB 307	Biomedical Instrumentation	
EGRB 401	Biomedical Engineering Senior Design Studio	
EGRB 402	Biomedical Engineering Senior Design Studio	
EGRB 421	Human Factors Engineering	
EGMN 300	Mechanical Systems Design	
EGMN 309	Material Science for Engineers	
EGMN 420	CAE Design	
EGMN 402	Senior Design Studio (Laboratory/	
& EGMN 403	Project Time) and Senior Design Studio (Laboratory/Project Time)	

College of Humanities and Sciences		
BIOL 496	Biology Preceptorship	
CHEM 310	Medicinal Chemistry and Drug Design	
ENGL 310	Business and Technical Report Writing	
ENGL 388	Writing in the Workplace	
INTL 320	International Marketing	
INTL 327	Introduction to Intercultural Communication	

INTL 418	International Management
INTL 446	International Human Resource Management
MASC 300	Technical Prowess
MASC 301	Graphics for Journalism
MASC 334	Public Relations Graphics and Production I
MASC 367	Audio and Video Journalism
MASC 415	Advanced Video Journalism
MASC 425	Public Relations Research
MASC 485	Web Site Design
PHYS 307	The Physics of Sound and Music
POLI 331	Public Administration
POLI 374	Financial Management for Nonprofits
PSYC 308	Stress and its Management
PSYC 310	Industrial Psychology
PSYC 317	Experimental Methods

The program director for product innovation will approve all course work intended to satisfy any elective requirements for the undergraduate Certificate in Product Innovation.

For more information, contact the student services coordinator for the VCU da Vinci Center at (804) 827-3764 or [davincicenter@vcu.edu](mailto:davincicenter@vcu.edu).

## Venture Creation, Certificate in (Undergraduate certificate)

Open to all VCU undergraduate students, the Certificate in Venture Creation focuses on developing a multidisciplinary mindset for successful entrepreneurialism and venture creation. Students participating in the program will hone understandings of the challenges, skills and resources necessary for venture creation, and through an immersive culmination experience, integrate these understandings around conceiving, planning and implementing a real venture.

### Learning outcomes

The VCU Certificate in Venture Creation enables students to learn and do entrepreneurship. Students participating in this program will:

1. Develop cross-disciplinary venture creation models
2. Effectively identify and address strategies
3. Apply venture creation skills to create, plan and implement a venture
4. Effectively communicate verbally and in writing

The Certificate in Venture Creation program runs concurrently with a student's major and is not a stand-alone program. Students should apply to the program during or after taking the introductory course, INNO 200. Interested students should submit their application to the VCU da Vinci Center, which administers the certificate program. Upon acceptance to the certificate program, a Change of Major form will be signed by the student and submitted to Records and Registration by the VCU da Vinci Center.

The certificate requires a minimum of 13 credit hours of approved course work as follows:

INNO 200	Introduction to Innovation and Venture Creation	1
----------	---	---

VNTR 300	Venture Creation Skills	3
VNTR 460	Venture Creation Project	3
Two discipline-specific electives (school approved 300- or 400-level courses; refer to the electives list below)		6
Total Hours		13

### Sample outline (classes taken in conjunction with major course work)

#### Year one

Fall semester		Hours
INNO 200	Introduction to Innovation and Venture Creation	1
Term Hours:		1

#### Spring semester

VNTR 300	Venture Creation Skills	3
One discipline-specific elective		3
Term Hours:		6

#### Year two

Fall semester		Hours
One discipline-specific elective		3
Term Hours:		3

#### Spring semester

VNTR 460 or ARTS 353	Venture Creation Project or Creative Disruption	3
Term Hours:		3
Total Hours:		13

### Electives

The approved list of electives is as follows:

For students pursuing a major in the School of the Arts

ARTS 350	The Creative Economy	3
ARTS 351	Piloting the Enterprise	3
ARTS 352	Idea Accelerator	3

For students pursuing a major in the School of Business

BUSN 400	Principles of Consulting	3
FIRE 313	Financial Management for Small Business	3

MGMT 321	Survey of Entrepreneurship	3
MGMT 422	Managing the Family Firm	3

For students pursuing a major in the School of Engineering

CMSC 451 & CMSC 452	Senior Project and Senior Project	6
EGRB 401 & EGRB 402	Biomedical Engineering Senior Design Studio and Biomedical Engineering Senior Design Studio	6
ENGR 402 & ENGR 403	Senior Design Studio (Seminar) and Senior Design Studio (Seminar)	2

All other students		
ACCT 202	Accounting for Non-business Majors	3
ARTS 350	The Creative Economy	3
ECON 203	Introduction to Economics	3

FIRE	311	Financial Management	3
MGMT	321	Survey of Entrepreneurship	3
MKTG	301	Marketing Principles	3

The program director for venture creation will approve all course work intended to satisfy any elective requirements for the undergraduate Certificate in Venture Creation.

For more information, contact the student services coordinator for the VCU da Vinci Center at (804) 827-3764 or email [davincicenter@vcu.edu](mailto:davincicenter@vcu.edu).

# OFFICE OF RESEARCH AND INNOVATION

800 East Leigh Street  
P.O. Box 980568  
Richmond, Virginia 23298-0568  
Phone: (804) 827-2262  
Fax: (804) 828-2051  
[research.vcu.edu](http://www.research.vcu.edu) (<http://www.research.vcu.edu>)

## Francis L. Macrina, Ph.D.

Vice president for research and innovation

The mission of the Virginia Commonwealth University Office of Research and Innovation is to create an environment that enables our investigators to: 1) effectively compete for research funding, 2) responsibly conduct research in compliance with mandated policies and 3) broadly disseminate knowledge gained and discoveries made.

Research universities provide the nexus of discovery, education and service. The research process evolves into scholarly publication, enlightening histories, interpretative arts, lifesaving drugs and remarkable innovations ranging from nanotechnology to macroeconomics. Each day VCU researchers make progress toward improving our quality of life and our understanding of the world around us.

Research at VCU provides an incubator for training new scholars and a new generation of students who understand where and how knowledge is formed. No matter their chosen career, all researchers benefit from the curiosity instilled and the recognition that learning is a lifelong process.

The research enterprise at VCU has made substantial forward steps in recent years, doubling the sponsored award base, renovating laboratories, rebuilding the research subjects' protection program and investing in state-of-the-art animal care equipment and facilities.

The VCU Office of Research seeks to partner with faculty in all schools and departments as they seek funding, plan studies, establish collaborations, calculate budgets, submit grant applications, negotiate industry contracts and secure patents and licensing agreements. Skilled staff within each of the major divisions — sponsored programs administration, research subjects protection, animal research, technology transfer, industry partnerships, and education and oversight — look forward to helping VCU faculty in all realms of the research process.

Affiliated research institutes include the Center for Clinical and Translational Research (and its Research Incubator), the Institute for Drug and Alcohol Studies, the Philips Institute for Oral Health Research, the Virginia Institute for Psychiatric and Behavioral Genetics, the Institute for Structural Biology and Drug Discovery and the Institute for Women's Health.

## Center for Clinical and Translational Research

1200 East Clay Street  
P.O. Box 980261  
Richmond, Virginia 23298-0261  
Phone: (804) 827-1531  
Fax: (804) 827-1510  
[cctr.vcu.edu](http://www.cctr.vcu.edu) (<http://www.cctr.vcu.edu>)

## F. Gerard Moeller, M.D.

Director

The Center for Clinical and Translational Research at Virginia Commonwealth University provides the necessary longitudinal and cross-disciplinary network, culture and infrastructure for identifying promising discoveries made in the laboratory, testing them in animals and developing trials and studies for humans.

Joint participation of researchers from across the university is critical to this mission. Partnerships with foundations and industry — particularly the support of the Virginia BioTechnology Research Park — is also crucial for moving these discoveries to the clinic. At the same time, mutually beneficial partnerships with community practitioners, community organizations and patients enhance the adoption of evidence-based best practices in general clinical practice and thus deliver improved medical care to the region.

The center offers a corridor in which participants in the translational research continuum can meet, interact and advance each others' missions. Bench and computer scientists will learn from animal models and clinician observations. Clinical researchers will recognize the need for communication with basic scientists to direct experimental design. Community practitioners will better understand their role in informing the clinical research process and participating in pragmatic clinical trials. Patients will develop a higher comfort level with "medical research."

The center also serves as the administrative unit for the interdisciplinary graduate degrees in clinical and translational sciences.

## Research Incubator

The Clinical and Translational Research Incubator is designed to serve as a hub for resources and networking opportunities for established researchers and junior clinical investigators who are working on novel, interdisciplinary and collaborative clinical research at VCU. The RI will support its investigators by coordinating and optimizing current resources and by developing innovative new resources to facilitate the research process. It is anticipated that faculty researchers from the schools of Allied Health Professions, Dentistry, Education, Engineering, Medicine, Nursing, Pharmacy and Social Work, as well as the College of Humanities and Sciences, will access services at the RI.



# GRADUATE SCHOOL

---

408 West Franklin Street  
P.O. Box 843051  
Richmond, Virginia 23284-3051  
Phone: (804) 828-6916  
Fax: (804) 828-6949  
[graduate.vcu.edu](http://www.graduate.vcu.edu) (<http://www.graduate.vcu.edu>)

**F. Douglas Boudinot, Ph.D.**

Dean

Graduate programs are administered by the individual departments, schools and centers with assistance from the Graduate School. Major coordination of the various degree programs is performed by the University Graduate Council, which is chaired by the dean of the Graduate School. The University Graduate Council is comprised of two elected faculty members from each school and one elected faculty member from VCU Life Sciences.

The Graduate School section of the VCU Bulletins documents the official admission and academic rules and regulations that govern graduate education at the university. The University Graduate Council determines these policies.

Bulletins (catalogs) and course descriptions for the current and past years are now archived in the VCU Scholars Compass (<http://scholarscompass.vcu.edu/vcubulletins>) hosted by the VCU Libraries. The online Bulletin is updated regularly to reflect changes that occur throughout the academic year.

## Graduate programs

In-depth descriptions of all graduate programs at VCU are provided in the individual school and program sections of this bulletin. The Graduate School website ([graduate.vcu.edu](http://www.graduate.vcu.edu) (<http://www.graduate.vcu.edu>)) provides links and contact information for all graduate programs offered at VCU. The website also provides updates that occur throughout the academic year, as well as the Application to Graduate Study and complete instructions for applying to all graduate programs.

Refer to the Program Search feature of this website for a complete listing of all graduate programs, as well as application deadline dates, and special admission requirements and contact information. Applicants are encouraged to contact the school/department sponsoring the intended program of study at the telephone numbers and/or email addresses provided. Other important contact information is provided on the Graduate School (<http://www.vcu.edu/graduate>) website as well.

## DIVISION OF COMMUNITY ENGAGEMENT

901 West Franklin Street  
P.O. Box 843062  
Richmond, Virginia 23284-3062  
Phone: (804) 828-8848  
Fax: (804) 828-2756  
[community.vcu.edu](http://community.vcu.edu) (<http://www.community.vcu.edu>)

### Catherine W. Howard, Ph.D.

Vice provost, Division of Community Engagement

The Division of Community Engagement mobilizes university-community partnerships that generate innovative solutions to societal challenges and prepares the engaged citizens of tomorrow. In advancing VCU's mission and strategic plan, Quest for Distinction, the office:

- Facilitates and coordinates innovative academic programs, on and off campus, to enhance the community's access to VCU
- Supports the involvement of faculty and students on the Monroe Park Campus and MCV Campus in community partnerships
- Creates opportunities for interdisciplinary, community-based collaborations that integrate research, teaching and service

The Division of Community Engagement resides within the Office of the Provost and Vice President for Academic Affairs and serves as the university's central home for community engagement. Community-engaged teaching, including programs such as ASPIRE and Service-learning, connects students and faculty with activities that address community-identified needs through mutually beneficial partnerships that deepen students' academics and civic learning. Community-engaged outreach actively enlists students, faculty and community members in efforts to identify social issues and provide innovative solutions. The Mary and Frances Youth Center and the VCU AmeriCorps and America Reads programs serve as models of developing and sustaining high-impact community-university partnerships. Community-engaged research is a collaborative process between the researcher and community partner that creates and disseminates knowledge and creative expression with the goal of contributing to the discipline and strengthening the well-being of the community.

### Service-learning

Service-learning integrates community service with traditional academic courses in order to enhance academic learning, facilitate the development of students into responsible citizens and meet community-identified needs. Each student participates in organized service activities that directly relate to the subject matter of the course and which meet community-identified needs. The students then participate in reflection activities, which are designed to increase their understanding and application of course content and enhance their sense of civic responsibility. The community organization defines the service need and the students learn and grow from their service through reflection on their experience. A listing of service-learning courses is provided in the Schedule of Classes (<http://www.pubapps.vcu.edu/scheduleofclasses>) each semester. For more information, call (804) 827-8215 or visit [servicelearning.vcu.edu](http://servicelearning.vcu.edu) (<http://www.servicelearning.vcu.edu>).

### VCU America Reads Program

The America Reads initiative began as a challenge put forth by former President Bill Clinton to "ensure that every child can read independently by third grade." Citizens from across the nation and all walks of life have answered the call to improve the literacy skills of struggling readers. VCU has responded to the challenge by setting aside college work-study funds for eligible students who want to make a difference in the life of a child.

The VCU America Reads Program is a sister program to the VCU AmeriCorps Program that places college work-study students in local elementary schools to provide comprehensive reading support to students who are below grade level in reading.

Applicants can apply through the VCU work-study jobs portal on the Financial Aid website at [finaid.vcu.edu/federalworkstudy](http://finaid.vcu.edu/federalworkstudy) (<http://finaid.vcu.edu/federalworkstudy>). Applicants may also apply directly to the VCU America Reads Program at [community.vcu.edu/outreach/america-reads/eligibility-requirements-and-application](http://community.vcu.edu/outreach/america-reads/eligibility-requirements-and-application) (<http://community.vcu.edu/outreach/america-reads/eligibility-requirements-and-application>).

### VCU AmeriCorps

AmeriCorps (<http://www.nationalservice.gov/programs/americorps>) is a national service corps of more than 75,000 members that provides adults of all ages a chance to make a difference in local communities across the United States through one year of service. Members work together to address a community-identified need in critical areas like education, homelessness, disaster relief and organizational capacity.

VCU AmeriCorps is the largest and longest-running AmeriCorps program in Virginia. Established in 1995, the VCU AmeriCorps Program has an educational focus with the goal of helping improve the literacy skills of children in grades K-3 attending Richmond Public Schools.

Applications are available beginning in March at [community.vcu.edu/outreach/americorps/eligibility-and-application](http://community.vcu.edu/outreach/americorps/eligibility-and-application) (<http://community.vcu.edu/outreach/americorps/eligibility-and-application>).

For additional information on the division's programs, visit [community.vcu.edu](http://community.vcu.edu) (<http://www.community.vcu.edu>).

### VCU ASPIRE

VCU ASPIRE  
825 West Grace Street  
P.O. Box 842538  
Richmond, Virginia 23284-2538  
Phone: (804) 827-1759  
Email: [aspire@vcu.edu](mailto:aspire@vcu.edu)  
[aspire.vcu.edu](http://www.aspire.vcu.edu) (<http://www.aspire.vcu.edu>)

### Erin Burke-Brown, Ph.D.

Director

VCU ASPIRE, the Academic Scholars Program in Real Environments, is an innovative and comprehensive community-engagement-focused living-learning program for undergraduates that transforms students into engaged citizens and acts as a powerful force for positive social change in the community. VCU ASPIRE aims to enrich and deepen students' understanding of their capacity to create positive change in communities through the connection of course work, cocurricular activities and a vibrant residential experience. Students selected as VCU ASPIRE scholars will live in the West Grace Street Student Housing –

South residence hall in the Grace Street Village, a collaborative group of living-learning communities. The residence hall contains state-of-the-art classrooms, meeting rooms, study areas, social lounges, two courtyards and modern apartment-style living.

The VCU ASPIRE living-learning community consists of 450 sophomores, juniors and seniors engaged in a two-year interdisciplinary program of studies that focuses on community engagement. Along with the students enrolled in the program, the residential staff, faculty and program leaders all share a commitment to service and community engagement. Experiences include a curriculum that builds knowledge and skills in civic responsibility, experiences within the residence hall that build social capital, service trips in the nation and abroad and sustained engagement within local communities. The VCU ASPIRE program promises to develop a generation of VCU graduates who are civically engaged citizens in a global society.

Through participation in sustained partnerships within local communities, VCU ASPIRE students' educational experiences are strengthened. Students participate with peers, community partners and faculty in authentic learning in real-world environments. Students also gain career experience through workshops, internships and field visits. The skills and knowledge of service and community engagement enhance students' academic and career choices. Further, service-learning class experiences increase students' desirability in the work force and distinguishes graduate school applicants.

During their two years in the program, VCU ASPIRE scholars take two three-credit classes in the academic facilities located within the residence hall and complete three one-credit community-based seminars led by outstanding faculty from across the university. Students select their service-learning class experiences from four interdisciplinary focus areas: vibrant, youth, health and green. Vibrant includes community arts, culture, economic development and public safety. Youth includes education, mentoring and community programming for children and teens. Health includes community health and wellness initiatives. Green includes community environmental initiatives.

## Certificate of completion

The academic component of VCU ASPIRE develops students' knowledge, skills and best practices for community engagement across all academic disciplines. The courses required for the community engagement certificate of completion emphasize community engagement across academic disciplines and take either a project-based or service-learning approach.

The VCU ASPIRE community engagement certificate of completion consists of nine credit hours taken during the two-year program. These nine credits are spread across five courses and are shown below in the order they are taken in the program. The initial two classes, UNIV 200 (or an approved equivalent) and CMST 300, focus on service and community engagement, the final three courses, CMST 301, CMST 400 and CMST 401, are community-based and utilize service-learning pedagogy.

The required course sequence for the nine-credit-hour certificate of completion, to be taken in conjunction with individual major requirements, is as follows.

### First program year, fall semester

UNIV 200	Inquiry and the Craft of Argument (or equivalent upon program approval)	3
----------	---	---

CMST 300	The Foundations of Community Engagement	3
----------	---	---

### First program year, spring semester

CMST 301	Neighborhood Research Seminar (service learning)	1
----------	--	---

### Second program year, fall semester

CMST 400	The Community Engagement Seminar (service learning)	1
----------	---	---

### Second program year, spring semester

CMST 401	The Capstone Community Engagement Seminar (service learning)	1
----------	--	---

VCU ASPIRE sections of UNIV 200 and CMST 300 are taught on the first floor of the West Grace Street South residence hall in state-of-the-art classrooms. The remaining three community-based service-learning seminars are taught in the Metro Richmond area by an interdisciplinary faculty that collaborates with a wide variety of community partners. Nonprofit organizations, schools, community associations, businesses, government offices and agencies develop sustainable partnerships with VCU ASPIRE to provide students with real-world experience that result in positive social change within local communities.

In addition to the classroom experiences, the certificate of completion requires a minimum of 100 hours of cocurricular experiences across the two-year program. A cocurricular experience can occur within the residence halls of the living-learning community, on campus, in the community or as part of a national or global VCU ASPIRE service project. These out-of-the-classroom experiences provide students with community-engagement-focused learning experiences in nontraditional settings. Community engagement cocurricular activities fall into three broad categories: (1) community-based service (volunteering); (2) community-based learning (speakers, workshops, training, etc.); and (3) community- or campus-based leadership (organizational or event leadership). To satisfy all cocurricular requirements of the certificate, VCU ASPIRE scholars must complete at least 75 hours in community-based service, 15 hours in community-based learning and 10 hours in community or campus leadership.

Finally, the community engagement certificate of completion requires participation in a few program milestone events, which all students must complete. Milestones include but are not limited to program orientation, meetings with the program adviser, program meetings and exit requirements.

To promote the success of VCU ASPIRE scholars, the ASPIRE program provides students with access to unique student support resources that integrate a commitment to community engagement with academic success. These student support resources are provided within the West Grace Street South residence hall and focus on three key areas: student learning, writing and career development. VCU ASPIRE will work with existing resources on campus to provide support services, except for program advising, which is conducted by the program staff.

## The application process

Students with professional or personal interests in service and community engagement are sought as residents in the VCU ASPIRE living-learning community. Students from all majors are welcome. Only full-time VCU students may apply for the program during the fall semester of their freshman or sophomore years. Rising seniors who have two more years of undergraduate studies remaining may petition the director for entry. The online application deadline is posted on

the program website ([aspire.vcu.edu](http://aspire.vcu.edu) (<http://www.aspire.vcu.edu>)). In addition to completing the admissions application, students must complete a housing contract for the West Grace Street South residence hall for two consecutive years.

The successful applicant will demonstrate commitment and interest in service and community engagement. Applications are reviewed for genuine, thorough and thoughtful responses to posted questions. The Admissions Committee is looking for students who have a passion for community engagement, a desire to actively engage in the ASPIRE curricular and cocurricular requirements and the intent to live in the West Grace Street South residence hall for 24 months. Students with a minimum GPA of 2.0 and an approved application will be admitted into the program. Students with approved applications and a GPA of less than 2.0 will be required to meet with the program staff before admission into the program is offered. Students need not have experience in service or community engagement in order to apply.

## **Certificate completion process**

All VCU ASPIRE scholars must complete the curricular and cocurricular requirements for the certificate of completion on schedule and in the intended progression. Students who fail to satisfy program requirements, including living in the West Grace Street South residence hall, will be removed from the program. Students failing to meet program requirements also may be relocated to another housing assignment. Students are expected to uphold university, VCU ASPIRE and community partner expectations for professional and personal conduct. Any behavior that violates standards of conduct may result in removal from the certificate program and the West Grace Street South residence hall.

Students who complete all of the above listed requirements will be awarded the Certificate of Completion in Community Engagement at the time of graduation. The program staff maintains a record of progress for all students. However, it is the student's responsibility to monitor their own program of studies and seek assistance when needed. A program adviser is available to all students. Regular communication with the program leadership and the ASPIRE program adviser in particular is critical to the successful completion of all certificate program requirements.

# DIVISION OF STRATEGIC ENROLLMENT MANAGEMENT

---

408 West Franklin Street, Second Floor  
Richmond, Virginia 23284-3065  
Phone: (804) 827-8737  
Email: [sem@vcu.edu](mailto:sem@vcu.edu)  
[sem.vcu.edu](http://www.sem.vcu.edu) (<http://www.sem.vcu.edu>)

**Luke Schultheis, Ph.D.**

Vice provost, Division of Strategic Enrollment Management

The Division of Strategic Enrollment Management (<http://www.sem.vcu.edu>) provides primary oversight for the recruitment, retention and graduation of students at all levels. The purpose of the division is to ensure academic quality and student success, which is dependent upon the recruitment, retention and timely graduation of a talented and diverse student body. Our goals and aspirations are clearly articulated in the university's strategic plan, and a primary component of our vision is to ensure that we attract and retain students who will graduate at a higher rate and who will contribute to a highly skilled 21st-century workforce.

Within the division there are several operational areas: Admissions, Degree Audit, Financial Aid, Military Student Services, New Student and Family Programs, Records and Registration, Student Accounting, the Student Services Center and the Transfer Center. The Office of Admissions manages the recruitment and application processes for all graduate, international and undergraduate applicants. Military Student Services works with veterans, active service members, spouses and dependents to ease the transition from military life to the world of academics. The offices of Degree Audit, Financial Aid, Records and Registration, Student Accounting and the Student Services Center oversee and manage the matriculation, financial aid, billing and graduation processes for all new and continuing VCU students. The Office of New Student Programs provides new students and their families with resources and programming to support the academic experience, while the VCU Transfer Center offers resources to transfer students to ensure a smooth and seamless transition to the university and support for successful progress toward graduation.

For more information, please visit the Division of Strategic Enrollment Management (<http://www.sem.vcu.edu>) website.



# DIVISION OF STUDENT AFFAIRS

901 Floyd Avenue  
P.O. Box 843017  
Richmond, Virginia 23284-3017  
Phone: (804) 828-1244  
Fax: (804) 828-2180  
students.vcu.edu (<http://www.students.vcu.edu>)

**Charles Klink, Ph.D.**

Interim vice provost for student affairs

The Division of Student Affairs comprises departments promoting the intellectual, cultural, personal, social, moral, financial, physical and psychological development of Virginia Commonwealth University students. The division provides administrative support for key policies of the university, including the VCU Honor System and the University Rules and Procedures. Visit the Division of Student Affairs online for updated information throughout the year at [students.vcu.edu](http://students.vcu.edu) (<http://www.students.vcu.edu>).

## Departments and offices

### Disability Support Services

This department welcomes and serves VCU students with documented disabilities who are registered for classes on the Monroe Park Campus. Visit their website for more information at [students.vcu.edu/dss](http://students.vcu.edu/dss) (<http://www.students.vcu.edu/dss>).

### Office of Multicultural Student Affairs

The OMSA features cultural programs, discussion groups, student organizations, scholarship opportunities and much more in an effort to strengthen the university's sense of community through cultural appreciation. Visit [omsa.vcu.edu](http://omsa.vcu.edu) (<http://www.omsa.vcu.edu>) for additional information.

### Office of Student Conduct and Academic Integrity

This office supports the educational mission of the university by educating students about appropriate behavior and fostering a community supporting academic success. Visit their website for more information at [students.vcu.edu/studentconduct](http://students.vcu.edu/studentconduct) (<http://www.students.vcu.edu/studentconduct>).

### Recreational Sports

Recreational Sports offers a diversity of programmed and informal recreational, fitness and sports activities for VCU students and faculty/staff/alumni/plus one members. Visit [recsports.vcu.edu](http://recsports.vcu.edu) (<http://www.recports.vcu.edu>) for more information.

### Residential Life and Housing

This unit provides safe, inclusive and well-maintained facilities where intentional communities are built to empower residents in their academic excellence, citizenship and personal growth. Visit their website for more information at [housing.vcu.edu](http://housing.vcu.edu) (<http://www.housing.vcu.edu>).

### Student Media Center

The Student Media Center is dedicated to the support and encouragement of responsible, independent student media to connect, explore and enrich the lives of the university's many constituencies. Visit

[studentmedia.vcu.edu](http://studentmedia.vcu.edu) (<http://www.studentmedia.vcu.edu>) for more information.

## Technology Support Services

Technology Support Services provide technical support and services to the Division of Student Affairs staff through the DSA help desk and VCU students through the Resnet help desk. Visit their website for more information at [servicedesk.vcu.edu](http://servicedesk.vcu.edu) (<https://servicedesk.vcu.edu>).

## University Counseling Services

UCS creates an environment that fosters student growth, development and psychological well-being through direct clinical service, education and prevention. Visit [students.vcu.edu/counseling](http://students.vcu.edu/counseling) (<http://www.students.vcu.edu/counseling>) for more information.

## University Student Health Services

USHS provides quality outpatient medical care and public health services, which includes health education programming that empowers students to become full participants in their health care. Visit their website for more information at [students.vcu.edu/health](http://students.vcu.edu/health) (<http://www.students.vcu.edu/health>).

## University Student Commons and Activities

The facilities, services and programs of USCA bring together all members of the VCU community and contributes to intellectual, emotional and social growth through informal interaction. Visit [usca.vcu.edu](http://usca.vcu.edu) (<http://www.usca.vcu.edu>) for more information.

## The Wellness Resource Center

The Well maximizes student success by fostering a healthy campus environment and is the public health outreach branch of University Student Health Services. Visit their website for more information at [thewell.vcu.edu](http://thewell.vcu.edu) (<http://www.thewell.vcu.edu>).

## VCU Career Services

Career Services is committed to providing support to VCU students and recent alumni (one year or less) in the lifelong career development process. Visit their website for more information at [careers.vcu.edu](http://careers.vcu.edu) (<http://www.careers.vcu.edu>).

## VCU LEAD

VCU LEAD is a living-learning program for undergraduate students of sophomore status or above, focused on developing graduates who can successfully lead professional and civic organizations within their respective fields. Visit [students.vcu.edu/vculead](http://students.vcu.edu/vculead) (<http://www.students.vcu.edu/vculead>) for additional information.

## Student government associations

The **Monroe Park Campus Student Government Association** is an elected body of students from the Monroe Park Campus who are organized into three branches — executive, legislative and judicial — with various committees. Nonelected, at-large members are encouraged to join most of these committees. All meetings of the senate are open to the public. Visit [vcusga.org](http://vcusga.org) (<http://www.vcusga.org>) for more information.

**MCV Campus Student Government Association** officers are elected from each of the health science schools. MCV Campus SGA meetings are held monthly from September through April and are open to all students. The MCV Campus SGA sponsors several social functions including the MCV

Campus Winter Ball and study breaks. More information can be found at [mcvcampussga.com/home](http://mcvcampussga.com/home) (<http://mcvcampussga.com/home>).

The **Joint Student Government Council** is the union of the two student governments on the Monroe Park and MCV campuses. A student-led governing body for VCU the JSGC works to represent the voice of all students. The council is especially concerned with joint matters, which consist of the desires, concerns and ideas that affect students on both of VCU's campuses. JSGC's body consists of delegates from the Monroe Park Campus SGA, the MCV Campus SGA, the Graduate Student Association and the student representatives to the Board of Visitors. More information can be found at [students.vcu.edu/dos/jsgc](http://students.vcu.edu/dos/jsgc) (<http://www.students.vcu.edu/dos/jsgc>).

The **Graduate Student Association** serves as an advocate for graduate students at VCU. It sponsors events such as meet-and-greets, monthly socials and the annual Graduate Research Symposium (<http://graduate.vcu.edu/research/symposium.html>) that are designed to enhance academic skills, provide professional development opportunities and facilitate an active social environment. The GSA and the Graduate School work together to assist students with travel costs for academic conferences. The GSA places students on campuswide committees to ensure concerns of graduate students are heard. Visit [graduate.vcu.edu/life/association.html](http://graduate.vcu.edu/life/association.html) (<http://www.graduate.vcu.edu/life/association.html>) for more information.

## University policies and procedures

A number of policies and regulations at VCU affect students, and many of these are printed in the general information chapters of this bulletin. Three policy documents are of particular interest to students.

- **VCU Rules and Procedures:** outlines the rights, responsibilities and privileges of each member of the university community and describes cases when disciplinary action, including separation from the university, may be taken against a member of this community as a result of prohibited behavior as outlined in this document
- **VCU Honor System:** defines academic dishonesty and provides a procedure for judging alleged violators of academic integrity
- **Grade Review Procedure:** outlines the process whereby students may appeal grades that they feel have been assigned unfairly

Each student is responsible for being familiar with the provisions of all university policies and regulations. The three policy documents described above are available in the VCU Policy Library, which is made available online at [policy.vcu.edu](http://policy.vcu.edu) (<http://www.policy.vcu.edu>).

## Division of Student Affairs courses

### **COOP 298. Cooperative Education Experience. 0 Hours.**

Semester course; the student works a maximum of 20 hours per week, completes all off-campus/on-campus assignments. No credit. Open to students who have been placed in an approved co-op position with an agency, business, industry or institution.

### **COOP 398. Cooperative Education Experience. 0 Hours.**

Semester course; the student works a maximum of 40 hours per week, completes all off-campus/on-campus assignments. No credit. Open to students who have been placed in an approved co-op position with an agency, business, industry or institution.

# GLOBAL EDUCATION OFFICE

912 West Grace Street  
P.O. Box 843043  
Richmond, Virginia 23284-3043  
Phone: (804) 828-8471  
Fax: (804) 828-2552  
global.vcu.edu (<http://www.global.vcu.edu>)

## R. McKenna Brown, Ph.D.

Executive director

The Virginia Commonwealth University Global Education Office advances the university's three global priorities:

- Improve the recruitment and retention of international students and scholars
- Increase the global engagement of VCU students and faculty
- Expand VCU's global footprint through research, teaching and service – especially as they impact global health

The Global Education Office is home to five units and programs that advance the internationalization of the university.

## Units and programs

### Education Abroad

Our study abroad office offers student advising and placement in a full range of programs abroad, as well as academic unit support in developing, operating and evaluating study abroad programs.

### English Language Program

Our fully accredited intensive English program offers beginner to advanced levels of academic preparation. This large and growing program concentrates on academic preparation and study skills that equip students for success in their educational and career pursuits.

### Global Outreach

Our global outreach team supports the university's academic units in identifying and pursuing global priorities within the context of Quest for Distinction by facilitating international institutional agreements, coordinating the university-wide Global Advisory Network, supporting international faculty development and providing funding opportunities for global initiatives.

### International Student and Scholar Programs

We offer students, scholars and visitors a full suite of services that include academic and immigration advising, student engagement activities and campus and community orientation. We equip faculty and staff with expertise and tools to support international students and scholars through workshops, faculty academies and individualized pedagogical consulting.

### VCU Globe: A global education living-learning community

One of only 25 Peace Corps Prep programs in the nation and recognized by the 2015 Senator Paul Simon Award for Innovation in International Education, VCU Globe prepares undergraduates in all majors to live and work in a 21st-century global environment. In addition to completing in a rigorous, globally-focused curriculum, students live together in the West

Grace North residence hall and participate in community engagement and leadership building activities.

## Education Abroad

### Stephanie Tignor

Director

[global.vcu.edu/abroad](http://global.vcu.edu/abroad) (<http://global.vcu.edu/abroad>)

VCU encourages students from every academic discipline to pursue part of their university education in an international setting by studying abroad. Education abroad benefits students academically, professionally and personally; students become more engaged in their academic field of study and often show stronger performance upon returning to campus from their study abroad experiences. Skills gained through education abroad help increase employment marketability upon graduation.

Students are encouraged to study in a foreign country for any length of time including summer, winter session, spring break, a semester or a full academic year as part of their degree program. The VCU Education Abroad office assists students in accomplishing these goals by providing information, advising and administering study abroad and exchange programs.

Participants must be in good standing with the university prior to participation. Please note that individual program requirements may vary.

## Program offerings

### VCU short-term study abroad

Each year VCU offers a variety of short-term program options during winter break, spring break or summer. Both faculty-led and direct-enroll options are available. Participants earn VCU or transfer credit and study subjects ranging from science, business and foreign language to arts, health care, economic development and beyond. New programs are created every year in countries as diverse as Barbados, Spain, Guatemala, Peru, Italy, Germany, Mexico, France and China.

### International Student Exchange Program

International Student Exchange Program is a network of more than 300 colleges and universities in 50 countries that provides exchange opportunities for a summer, semester or academic year. ISEP is well-suited for mature, independent students who wish to be fully immersed into the host culture. Students usually enroll directly into their host university and take classes in the host language. A wide variety of options to study in English is also available. ISEP offers an affordable option to study abroad — many of its locations' charges are based on the cost of VCU in-state tuition, fees, and room and board.

### Departmental and partnership exchanges

VCU has negotiated a number of direct student exchange agreements arising out of specific interest in the university community. Students pay their tuition and fees at VCU and enroll directly in the chosen host university. Options include a variety of destinations including Curtin University in Perth, Australia, University of Guadalajara, Mexico, University of the West of England in Bristol, UK, and the University of Córdoba, Spain.

### Affiliate and alternative programs

Students seeking alternatives to VCU short-term programs, ISEP and exchanges may consider affiliate or alternative programs. Students may elect to participate in a program offered by another university or

organization. VCU Education Abroad will assist students in identifying and applying to the program, maintaining their VCU status while away, and securing financial aid where appropriate. All programs must be pre-approved by VCU.

Except for specific VCU short-term programs offered for VCU credit, all credit received through study abroad will appear on the students' transcripts as transfer credit. Students must earn the equivalent of a C, at minimum, for credit to be awarded. Grades are not calculated into the GPA, unless a student is attempting to graduate with honors.

## English Language Program

**Amber Bennett Hill, Ph.D.**  
Director

[global.vcu.edu/elp](http://global.vcu.edu/elp) (<http://global.vcu.edu/elp>)

The English Language Program offers an intensive university-preparation language program for non-native speakers of English and serves international students, U.S. citizens, permanent residents and refugees. Core courses are offered at three levels of instruction — beginning through advanced — in multiple sessions each year. Core courses include reading and writing and speaking and listening.

Students may apply directly to the English Language Program. Admission to the ELP may also be recommended by VCU Undergraduate Admissions and International Admissions at the time of the application review. Placement in the ELP is based on the results of an English Language Placement Exam, taken upon arrival in Richmond.

### More information

For more information, students may contact the English Language Program office at 912 W. Grace St., by phone at (804) 828-2551, by fax at (804) 828-2552 or by email at [geo@vcu.edu](mailto:geo@vcu.edu).

## Global Outreach

**Emily Ferlis, Ph.D.**  
Director

[global.vcu.edu/outreach](http://global.vcu.edu/outreach) (<http://global.vcu.edu/outreach>)

The global outreach team supports the university's academic units in identifying and pursuing global priorities within the context of Quest for Distinction by facilitating international institutional agreements, coordinating the universitywide Global Advisory Network, supporting international faculty development and providing funding opportunities for global initiatives.

## International Student and Scholar Services

**Amber Bennett Hill, Ph.D.**  
Director

[global.vcu.edu/students](http://global.vcu.edu/students) (<http://www.global.vcu.edu/students>)

International students face many challenges when entering a new country. GEO's International Student and Scholar Programs offers assistance and guidance as students adjust to a different culture and pursue their educational goals.

Program advisers help with pre- and post-arrival concerns, such as immigration, academic preparation and registration, airport pick-ups, housing, banking, health insurance, and other orientation activities.

Support continues throughout an international student's stay at VCU. The International Student and Scholar Programs staff assists, advises and refers students with academic, immigration, personal, legal, health and cultural issues. Advisers also confer with VCU faculty, staff and university officials regarding student concerns.

International Student and Scholar Programs offers educational, cultural and social activities that promote international understanding and community. Some activities include Global Cafes, Conversation Partners, Friendship Families, visits to places such as Washington, D.C. and New York City and other trips, including camping and skiing.

For information or assistance, please contact International Student and Scholar Programs, Global Education Office, 912 W. Grace St., at (804) 828-8471, by fax at (804) 828-2552 or by email at [geo@vcu.edu](mailto:geo@vcu.edu).

## VCU Globe

### VCU Globe: A global education living-learning community

**Jill E. Blondin, Ph.D.**  
Director

[global.vcu.edu/vcuglobe](http://global.vcu.edu/vcuglobe) (<http://www.global.vcu.edu/vcuglobe>)

VCU Globe: A global education living-learning community combines a global education curriculum with coordinated residential activities, experiential learning and leadership training through structured engagement in global communities on the VCU campus, in Richmond, Virginia, and abroad. Students learn about the challenges and opportunities that come with globalization and the unique potential of education to provide solutions; and they work collaboratively to identify problems and design interventions. Students move through the program in cohorts — sharing common courses, experiential learning activities and cocurricular programming. In the program, students expand their identities as global citizens and develop skills in leadership and teamwork both in global education and in their academic majors.

The curriculum of VCU Globe focuses on seminars and applied experiences in global education, engagement and leadership. Global education has emerged as an important element in higher education with the recognition that students and faculty live and work in increasingly globalized settings. Global educational themes and concepts inform general and disciplinary curricula at institutions across the U.S., and global education is an emerging discipline within its own right. Global engagement is the transformative experience of deeply interacting with people and ideas spanning the contemporary world. The ideas of global education and the experiences of global engagement form the foundation necessary for the development of sound global leadership skills, such as effective cross-cultural communication, multicomponent organization and program evaluation.

### Overview

Orientation to VCU Globe occurs in the spring of freshman year when new students enroll in GLED 101. In the sophomore year, students are introduced to core concepts, including global education as a learning paradigm, the role of the "culture broker" in professional fields and the emerging idea of world citizenship. Students go on to explore

definitions of culture and community in the contemporary world, global communication styles and skills, and sustainable asset-based development. In advanced courses in the junior year, students study emerging ideas of citizen-leadership, trans-community communication and organization, and the global commons. In all courses, students take ideas learned in the classroom and put them to use teaching English as a second language in local global communities, mentoring international and English language-learning peers on campus, working in a wide array of global community organizations in Richmond and abroad, and developing and leading independent community-service projects.

In all elements of the program, students are encouraged to identify ideas, themes and skills of particular relevance to their academic major and professional plans. VCU Globe faculty and advisers facilitate students' integration of global education content and experience with their majors.

VCU Globe collaborates with faculty and staff in the university's living-learning programs to hold joint events, offer reciprocal courses and share facilities to make the Grace Street Village a vibrant and engaged intellectual center of campus activity.

## Applying to VCU Globe

Students apply to VCU Globe in the fall of their freshman year. Students in any undergraduate major may apply, and applicants are expected to demonstrate interest in learning to effectively navigate within and between global communities at home and abroad, in professional and personal contexts. Accepted applicants participate in a credit-bearing orientation course (GLED 101) in the spring of freshman year and enter the program and the residence hall in fall of sophomore year. They continue in the program and live in the residence hall through their junior year. Participation continues in the senior year with GLED 401, with some residential slots being available to seniors.

Students other than rising sophomores may petition to apply to the VCU Globe, provided they have at least six academic semesters (including fall, spring and summer) remaining at VCU before graduation. Such students should request a meeting with the director of the VCU Globe prior to submitting an application.

## Certificate of completion

In order to graduate with a Certificate of Completion in Global Education, a student must:

- Complete GLED 101, GLED 201, GLED 202, GLED 301, GLED 302 and GLED 401, for a total of six credits
- Complete a GLED-only section of UNIV 200
- Complete at least three additional credits in GLED 391 or in a course approved by the VCU Globe Director
- Complete at least 40 hours of service work
- Demonstrate experience in cultural immersion
- Have a minimum 2.0 cumulative GPA at graduation
- Have a minimum 2.0 GPA in GLED courses at graduation
- Attend at least five VCU Globe cocurricular events each academic year
- Submit a curricular and cocurricular portfolio
- Students who wish to undertake further course work can enroll in GLED 493 following the completion of GLED 401; this course does not count toward the certification of completion in global education. Seniors selected for participation in GLED 493 exhibit a high level of professionalism, interpersonal sensitivity and strong

communication skills, as well as demonstrated abilities in leadership and teamwork.

Students who present exceptional service or leadership, as demonstrated by the portfolios, the completion of at least 18 credits in the program, a minimum GPA of 3.5 in the program, and are members of the Honors College, may be awarded honors in global education at graduation.

## Peace Corps Prep program

VCU Globe is a Peace Corps Prep (<http://www.global.vcu.edu/vcuglobe/peacecorpprep>) program. Upon successful completion of all VCU Globe requirements and two years of a foreign language (eight-14 credits, four semesters or equivalent placement) students can also receive a certificate of completion from the Peace Corps.

## Special sections

Given the varied academic and professional interests of students in VCU Globe, the global education curriculum includes sections of GLED 391. These courses are taught by VCU Globe Faculty Fellows and include special global education sections of existing courses and specialized full-semester courses. These courses are intended to develop students' abilities crossing cultural and personal borders and to acquire such skills with reference to professional goals and plans. Courses focus on exposing students to a global range of individuals and groups of people, and students have direct and substantive contact with worldviews and experiences different from their own. Courses also seek to develop students' awareness of the skills required of a global citizen/culture broker within relevant professional fields. Classes may be designed for particular majors, but generally do not have advanced prerequisites, so that interested global education students from a variety of majors may enroll.

## Service

Students must complete at least 40 hours of service work. The hours to be completed are part of core GLED course requirements. Service may be completed in a variety of campus and community, or even global, settings. On-campus opportunities include mentoring of international students and participating in the orientation of new international and English Language Program students. Service opportunities in the community include working with nonnative English-speaking children in local schools and ESL adults in community clinics. Cooperative agreements with organizations also serve to place students in community settings. Opportunities for students to participate in international community service projects are available with VCU's partnership universities and in conjunction with VCU faculty members.

Students beginning in the program engage in service activities on campus (with a high level of supervision) including helping with orientation programming for international students and English Language Program testing, as well as mentoring their peers on campus.

Included in both curricular and cocurricular programming are intensive and extensive training of all students to prepare them for their community service activities. This training includes explicit instruction on professional behavior and conduct, appropriate communication formats and styles, awareness of and sensitivity to the individuals and communities with whom they work, and the consequences of not behaving professionally and appropriately at all times when working in a service capacity. These themes are revisited often throughout VCU Globe's curriculum and cocurriculum.



Because of the nature of the service required of VCU Globe's students, all applicants must be able to pass a background check, which is necessary to work with students in local schools and in many other settings.

## Cultural immersion

Cultural immersion refers to sustained, significant interaction with a new cultural group, during which a student exercises his/her abilities to empathetically observe and evaluate situations from the point of view of that cultural group's members. It requires developing a sense of cultural differences and similarities and a critical reflection of one's own cultural system. It may be demonstrated by one or more of the following:

- Proficiency in a foreign language equivalent to the intermediate level (through completion of a foreign language through the 202 level or equivalent through credit, placement testing or other demonstrated proficiency)
- Proficiency in English as a second language (through TOEFL score of at least 79, IELTS score of at least 6.0, VCU's English Language Program placement testing or completion of VCU's English Language Program)
- Completion of an approved study abroad program (with prior approval)
- Completion of an approved homestay program (with prior approval)
- Sustained substantive involvement in a global community organization at VCU or in the Richmond community (with prior approval)
- Completion of an international service project (with prior approval)
- Other experience with prior approval

A student's plan for fulfilling this requirement should be discussed at initial advising meetings, and progress toward completion should be reviewed at subsequent meetings.

## Grading

The content, training and service required in global education courses is cumulative, so that a student who fails a course prerequisite to another course will be unable to continue in the program's curricular sequence. A student who fails a required GLED course may appeal according to the guidelines established in the university's grade review procedure and may register for and attend the next required course in the sequence pending the outcome of that review. The student should first discuss the grade in question with the faculty member who assigned the grade, that faculty member explaining how the grade was determined. If the student continues to feel that the grade was incorrectly assigned, a written appeal may be submitted to the director of VCU Globe. Students appealing grades assume the burden of proof. The appeal shall state and support with all available evidence the reasons why the student believes the grade should be changed. For grades awarded for the fall semester, the written intent to appeal must be submitted no later than 14 calendar days after the beginning of the spring semester. For grades awarded for the spring semester, the written intent to appeal must be submitted no later than 14 calendar days after the first day of the summer semester. For grades awarded for the summer semester, the written intent to appeal must be submitted no later than 14 calendar days after the first day of the fall semester. If the appeal is not granted, the student must drop or withdraw from the course. Students must pass all required GLED courses and must be making satisfactory progress in the service aspect of the curriculum (as determined by VCU Globe staff) in order to continue in the program from sophomore to junior year and

junior to senior year. Residency contracts are subject to annual reviews of satisfactory progress.

The integration of the global education curriculum into the academic programs of students majoring in a wide variety of disciplines and engaging in significant community service requires significant advising resources. The director of VCU Globe works with global education faculty and VCU Globe staff to provide academic advising and community service placement and supervision, to supervise seniors engaged in practicum work and to liaise between VCU Globe and community organizations and service supervisors.

# THE HONORS COLLEGE

701 West Grace Street  
P.O. Box 843010  
Richmond Virginia 23284-3010  
Phone: (804) 828-1803  
Fax: (804) 827-1669  
honors.vcu.edu (<http://www.honors.vcu.edu>)

**Barry L. Falk, Ph.D.**  
Dean

**Jacqueline Smith-Mason, Ph.D.**  
Associate dean and director of academic affairs

The Honors College offers highly motivated and high-achieving undergraduates a liberal arts college experience within the context of a large, urban, public research university. The Honors College is appealing to students from all majors who want to transcend disciplinary boundaries, be innovative and address big questions through classroom and, especially, experiential learning. With that in mind, the Honors College prepares students to be skilled communicators, critical thinkers and problems solvers. Further, students have opportunities to develop their understanding of language and culture locally and internationally, while also gaining a sense of social responsibility and a broad understanding of diversity and inclusion in the 21st century.

The center of activities for The Honors College is located at 701 W. Grace St., a living/learning, residential honors community. In this facility, students have meeting rooms, quiet study rooms, computers and recreational areas. This facility is open to honors students day and night for study.

## Graduation with University Honors

Academic advisers at VCU help students in The Honors College select classes that will fulfill the requirements for graduation and match students' interests. In addition, honors students are eligible to take courses designated as "honors." Some classes are specialized courses for The Honors College. Other honors courses are special sections of regular courses open only to honors students. Class size is limited to 20 students to maximize opportunities for interaction with the instructor and fellow students. All honors courses are noted on the student's official transcript.

To graduate with the distinction of University Honors, entering freshmen must complete the honors core curriculum (20 credit hours) and an additional four credits of elective honors courses, maintain a minimum 3.5 cumulative GPA and present a dossier documenting how he or she has become a well-educated individual. The honors core curriculum comprises eight courses:

HONR 150	Flourishing	1
HONR 160	Introduction to Community Engagement	1
HONR 200	Rhetoric	3
HONR 250	Expository Writing	3
PHYS 215	Science, Technology and Society	3
PHIL 230	Reason, Science and the Self	3
MATH 230	Mathematics in Civilization	3
POLI/INTL 365	International Political Economy	3

Continuing and transfer students entering The Honors College with 12-53 credits (freshmen and sophomores) must complete the following courses: PHYS 215, PHIL 230, MATH 230 and POLI 365/INTL 365 (honors section) and take 12 additional hours in honors to meet the requirements for graduation with University Honors. Transfer students entering with 54-74 credits from their transfer institution must complete 12 credits in honors course work in order to graduate with University Honors. The dossier will be presented to the dean and the Honors Council in the penultimate semester of the student's academic work. Details, including deadlines and tips on writing the dossier essay, are available on The Honors College website at [honors.vcu.edu](http://honors.vcu.edu) (<http://www.honors.vcu.edu>).

## Academic policies and requirements

- Students in The Honors College must maintain a minimum cumulative GPA of 3.5 and a 3.2 GPA in honors courses.
- Honors students should achieve a standard of excellence in general education as well as in their major field.
- Honors students must satisfy a Diversity of Study requirement by completing a minor, dual degree or second major, or by completing at least two upper-level courses outside their field of specialization.
- The honors student must complete at least 18 credit hours in courses designated as honors courses. Students entering The Honors College must complete at least 24 credits in courses designated as honors courses.

The GPA minimums and the 24 credits (or 12 credits, as applicable) are nonnegotiable. The central objective of The Honors College is that the students demonstrate good scholarship and sound learning in the best of the university's tradition.

## Special opportunities

The Honors College offers a number of opportunities to its student members. Among these are:

**The Honors College Student Executive Board** – an organization of Honors College students who help determine the course of The Honors College, as well as host social, service and leadership activities for Honors College students

**Honors College internships and independent studies** – honors-specific educational programs, often taught in conjunction with academic departments that introduce honors students to opportunities in their fields of interest and within the Richmond community.

**The Berglund Seminar Series** – weekly discussions on topics pertinent to the wide-ranging interests of honors students. Discussions are led by outstanding guest speakers from the university faculty and administration, and a variety of community leaders.

The Honors College is committed to enriching the students' academic and personal endeavors. Additional resources and opportunities include

- An honors undergraduate research program
- Access to the National Scholarship Office
- Honors advising
- Priority registration
- Special library privileges
- First-year and upper-class honors housing options
- Access to first-year and alumni mentorship opportunities
- Global learning experiences

- Honors scholarships

## Admissions to the Honors College

### Eligibility requirements for incoming freshman students

The Honors College is open to qualified entering freshmen, continuing students who demonstrate excellence after enrolling at VCU and transfer students who have shown similar ability at other institutions.

High school graduates with combined new SAT scores of at least 1910 (from one test administration) and a 3.5 or higher unweighted high school GPA (on a four-point scale) **or** are the recipients of a VCU Presidential Scholarship are eligible for admission to The Honors College upon application.

### Transfer student admissions

Transfer students with at least a 3.5 cumulative GPA in 12 to 74 semester credit hours of study from their transfer institution must complete an Honors College application and present a personal education essay.

The essay describes the student's perspective on his/her personal education. Specific directions for the paper are found in the admissions information for prospective students on the Honors College's website at [honors.vcu.edu](http://www.honors.vcu.edu) (<http://www.honors.vcu.edu>).

Transfer students who have accumulated more than 74 credits of college course work may petition the dean of The Honors College to gain admission. Petitioning students must be prepared to offer an explanation for the delay of their application to The Honors College and present a plan for completing the requirements for graduation with University Honors. Appeals will be reviewed on a case-by-case basis.

### Admission for current VCU students

Continuing students with at least a 3.5 cumulative GPA in 12 to 53 semester credits at VCU must complete an Honors College application and present a personal education essay. The essay describes the student's perspective on his/her personal education. Specific directions for the paper are on the The Honors College website, [honors.vcu.edu](http://www.honors.vcu.edu) (<http://www.honors.vcu.edu>).

Continuing students who have accumulated more than 53 credits of college course work may petition the dean of The Honors College to gain admission. Petitioning students must be prepared to offer an explanation for the delay of their application to The Honors College and present a plan for completing the requirements for graduation with University Honors. Appeals will be reviewed on a case-by-case basis.

### Responsibilities

Admission to The Honors College is a privilege that comes with certain responsibilities. In addition to maintaining at least a 3.5 cumulative GPA, honors students are expected to be active members of The Honors College community. To remain active, students must enroll in at least one honors course per academic year and attend at least three honors seminars or other honors events per semester.

To continue in The Honors College, a student must maintain a cumulative GPA of 3.5 or higher. Should a student's cumulative GPA fall below 3.5, but not below a 3.0, the student may be placed on Honors Probation for one semester.

### Honors course approval process

All courses designated as honors must be approved by the Honors College. For more information, contact the Honors College at (804) 828-1803 or visit [honors.vcu.edu/academics](http://honors.vcu.edu/academics) (<http://www.honors.vcu.edu/academics>).

### Guaranteed Admission Program

The Honors College Guaranteed Admission Program allows some honors students to gain admission to certain of the university's professional health sciences or graduate programs. (Visit [honors.vcu.edu](http://honors.vcu.edu) (<http://www.honors.vcu.edu>) for specific program information.) Honors students in the GA Program generally may enter the program of their choice without competing via general admission, provided they fulfill the requirements for graduating with University Honors and satisfy all of the requirements of the GA Program.

### Guaranteed Admission Program application procedures

To be accepted into a GA Program, a student must be accepted by the university, by The Honors College and by the admissions committee of the program the student wishes to enter. A separate application for guaranteed admission is required. The admissions committee may require an interview. The application (postmark) deadline for the GA Program (all health sciences) is Nov. 15 of the year prior to the year the student is planning to enroll at VCU.

For additional information about The Honors College GA Program, see The Honors College website at [honors.vcu.edu](http://honors.vcu.edu) (<http://www.honors.vcu.edu>), or write or call Dr. Barry Falk, Dean, The Honors College, Virginia Commonwealth University, P.O. Box 843010, Richmond, VA 23284-3010, (804) 828-1803, [blfalk@vcu.edu](mailto:blfalk@vcu.edu) ([blfalk@vcu.edu](mailto:blfalk@vcu.edu)).

# OFFICE OF CONTINUING AND PROFESSIONAL EDUCATION

---

9 West Cary Street  
 P.O. Box 842505  
 Richmond, Virginia 28284-2505  
 Phone: (804) 828-1322  
 Fax: (804) 828-6444  
 Email: [ocpe@vcu.edu](mailto:ocpe@vcu.edu)  
[ocpe.vcu.edu](http://ocpe.vcu.edu) (<http://ocpe.vcu.edu>)

**Michael Huffman, Ph.D.**  
 Director

The Office of Continuing and Professional Education (<http://ocpe.vcu.edu>) offers a wide range of services to VCU and to the community at large. The office, which is home to the Virginia Center for Consensus Building (<http://ocpe.vcu.edu/who/vccb.html>), combined the functions of two previous entities — the School of Education's Center for Professional Growth and the Division of Community Engagement's Office of Continuing Studies — to create a single, comprehensive hub for delivering and supporting quality learning experiences to individuals and organizations through continuing education and professional development.

## Mission

OCPE, in partnership with the college and schools at VCU, provides and supports quality continuing and professional education, skills training and public policy mediation services for individual, local, regional and national impact. OCPE aligns its priorities to the appropriate themes of the Quest for Distinction.

## Goals

OCPE provides:

- Comprehensive logistical support for continuing education and professional development activities for the college and schools at VCU and VCU Health System
- Educational opportunities that further personal, professional and organizational growth
- Customized solutions and mediation services to our partners in the marketplace
- Lifelong learning opportunities for VCU alumni

Whether individuals want to enhance their career or find a new one, fulfill CEU requirements, develop customized training solutions for a company, arrange logistical support for an event, or find opportunities for personal enrichment, OCPE offers courses and services to achieve these goals.

For more information, please visit the Office of Continuing and Professional Education website (<http://ocpe.vcu.edu>) or explore the course directory (<http://ocpe.vcu.edu/courses>).

# UNDERGRADUATE COURSES

## College of Humanities and Sciences

### African American Studies (AFAM)

#### **AFAM 104. Sociology of Racism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The course will explore the direct and indirect ways in which racial attitudes are acquired, their effect on individuals and society, and the institutional and ideological manifestations of racism as a "faith system," as exploitation and as a form of human conflict. The central focus of interest will be on black-white relationships. Crosslisted as: SOCY 104.

#### **AFAM 105. Survey of African History. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of African civilization from prehistory to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Africa's place in the world. First semester: to 1800. Second semester: 1800 to the present. Crosslisted as: HIST 105.

#### **AFAM 106. Survey of African History. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of African civilization from prehistory to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Africa's place in the world. First semester: to 1800. Second semester: 1800 to the present. Crosslisted as: HIST 106.

#### **AFAM 111. Introduction to Africana Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Using a multidisciplinary approach, this course will familiarize students with important events developments, personalities and other phenomena that help facilitate the study and understanding of peoples of African descent dispersed throughout the world from their early continental African past to their present existence.

#### **AFAM 121. Tap Technique I. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Beginning study and training in the principles of tap technique with emphasis upon style, body alignment, spatial patterning, flexibility, strength and kinesthetic awareness to move the body in the style required for tap dancing. Crosslisted as: DANC 121.

#### **AFAM 122. Tap Technique I. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Beginning study and training in the principles of tap technique with emphasis upon style, body alignment, spatial patterning, flexibility, strength and kinesthetic awareness to move the body in the style required for tap dancing. Crosslisted as: DANC 122.

#### **AFAM 126. African-Caribbean Dance I. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Dance based on the movements and rhythms of Africa and the Caribbean. Crosslisted as: DANC 126.

#### **AFAM 127. African-Caribbean Dance I. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Dance based on the movements and rhythms of Africa and the Caribbean. Crosslisted as: DANC 127.

#### **AFAM 151. Jazz Dance Technique I. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DANC 102 or permission of instructor. Study and training in the principles and concepts of jazz technique. Emphasis on body alignment, flexibility, balance, rhythmic awareness and mastery of isolated movements of body parts. The course includes the exploration of the relationship between jazz music and jazz dance. Crosslisted as: DANC 151.

#### **AFAM 152. Jazz Dance Technique I. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DANC 102 or permission of instructor. Study and training in the principles and concepts of jazz technique. Emphasis on body alignment, flexibility, balance, rhythmic awareness and mastery of isolated movements of body parts. The course includes the exploration of the relationship between jazz music and jazz dance. Crosslisted as: DANC 152.

#### **AFAM 200. Introduction to African Societies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course introduces the student to the African continent, its peoples and cultures. It covers such general characteristics as the physical and geographical features, climate, topography, traditional economies, languages, religions, social systems and other cultural features that are traditional to its people. Crosslisted as: ANTH 200/INTL 200.

#### **AFAM 204. Africa in Transition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: AFAM/ANTH/INTL 200 or permission of instructor. The impact of modern social change upon the traditional aspects of African life. Various aspects of social change as it applies to Africa today will be explored.

#### **AFAM 206. African American Family Relationships. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Focuses on the African-American family from the 1940s to the present. Examines the values and the interpersonal/role relationships that are involved in forming and maintaining African-American families in the contemporary United States. Topics include dating and sexual relationships, marital relationships, parent-child relationships and relationships with members of the extended family. Crosslisted as: SOCY 206/GSW 206.

#### **AFAM 211. Africana Social and Political Thought. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Guides students in identifying and mapping the continuities and discontinuities in political and social thought of the African world. Through an exploration of the various works of scholars, activists and artists, this course will expose students to nondominant narratives in an effort to expand the breadth and depth of interdependence in Africana contributions to ideas such as, but not limited to, the arts, justice, equality and human emancipation.

#### **AFAM 250. Introduction to African-American Music. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introductory survey of black involvement with the development of music in America from 1607 to the present. African-American musical styles will be studied from many aspects including their African roots and contemporary popular expression. Crosslisted as: MHIS 250.



**AFAM 291. TOPICS. 1-3 Hours.****AFAM 302. Politics of the Civil Rights Movement. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The main objectives of the course are to introduce and examine the personalities and activities of the modern Civil Rights Movement. The course provides the historical background leading up to the peak years of the struggle for racial equality in America. It has special focus on the events of the 1960s and, particularly their implication for the current state of U.S. Civil Rights. Crosslisted as: POLI 302.

**AFAM 303. Black Theatre. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the major developments in the evolution of black theatre through readings and studio performances in black-related and black-theatre dramaturgy. Crosslisted as: THEA 303.

**AFAM 305. African American Family in Social Context. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A socio-historical examination of the development of the family system of Americans from Africa. Focuses on large-scale (macro level) processes such as changes in the major mode of economic production and in political systems and the corresponding changes in black family structure and functioning. Presents the theoretical material on African-American families and social change that prepares students for further study of the family as a social institution and for the study of family policy. This course is designed to meet the needs of upper-division social science majors. Crosslisted as: GSWS 305/SOCY 305.

**AFAM 307. Black Religion. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An analysis of the role of religion in the lives of blacks with an emphasis on African religions and philosophies, the black church in America, and the roles of the various faiths, sects and cults. Crosslisted as: RELS 307/INTL 307.

**AFAM 309. Global Women's Health. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Explores issues in women's health from a national and international perspective with an emphasis on the experiences of women in the African diaspora. Theories in medical anthropology are employed to examine key themes. Crosslisted as: ANTH 309/INTL 309/GSWS 309.

**AFAM 310. African American Health: Health Disparities. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines health and health disparities among African-Americans in the U.S. Explores the primary health concerns and issues in the African-American community. Topics include impacts of infant mortality, cardiovascular disease, AIDS, violence and cancer on the overall health status of African-Americans.

**AFAM 311. African Diaspora Experiences. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Traces the geography and history of dispersed African peoples from their motherland to all parts of the world and reveals the cultural, social, political and economic developments of peoples of African descent worldwide. Surveys the evolution and implication of the trans-Atlantic, trans-Saharan, and trans-Indian Ocean slave trade, in particular the dimensions of experiences of African-descended peoples with emphasis not only on North and South America but also the Caribbean, Europe, Asia, Papua New Guinea and Australia.

**AFAM 315. Economic Development. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B and ECON 211; or ECON 210 and ECON 211. An introduction to the process of economic development including a survey of development theory and a study of the experience of both underdeveloped and developed countries. Economic policies and tools of economic planning for stimulating development will be presented. Crosslisted as: ECON 315/INTL 315.

**AFAM 318. Politics of Race, Class and Gender. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the racial, class and gender influences on the history and development of political values, conflicts, processes, structures and public policy in the United States. Crosslisted as: POLI 318/GSWS 318.

**AFAM 322. Personality and Behavior of the African American. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. A study of personality factors, such as motivation, ego functioning and the socialization processes with special emphasis on living conditions of African-Americans. Crosslisted as: PSYC 322.

**AFAM 333. Geography of Africa. 1-3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the land forms, climate, peoples, livelihoods, settlement patterns and cultural groupings of sub-Saharan Africa. Crosslisted as: URSP 333/INTL 333.

**AFAM 342. African-American Art. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 104 and UNIV 200 or HONR 200, both with a minimum grade of C. A study of the art forms produced by Americans of African origin from the 17th century to the present with an emphasis on contemporary trends in black art. Crosslisted as: ARTH 342.

**AFAM 343. Black Political Thought. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An historical and sociological perspective on the political and social ideas of black thinkers from David Walker to the present. Crosslisted as: POLI 343.

**AFAM 345. African-American Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. In this course, students will discuss and analyze the dynamics of the black experience in the American political system. The status of African-Americans in the United States and the struggle for racial equality will be examined, as will the manner in which American institutions have responded to these phenomena. Students will examine the race/class metric in African-American politics, particularly policies of Affirmative Action as a black progress strategy. Crosslisted as: POLI 345.

**AFAM 346. Mental Health Across the African Diaspora. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Surveys theory and research on the interaction of culture and mental illness focusing primarily on populations of African descent in a seminar format. Topics to be addressed, through the lens of the Africana world, include epidemiological and ethnographic research on major psychiatric disorders, culture-bound syndromes and idioms of distress, mental health of immigrants and refugees, and cross-cultural competence in clinical practice.

**AFAM 347. African American Children and Families. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Reviews cultural variations in the physical, cognitive, emotional and social development of African American children. Addresses historical and contemporary frameworks of child development and highlights the strengths and limitations of extant research paradigms in the study of African American children. Considers integrity-based approaches that explain the developmental competencies of African American children in response to environmental risks that exceed normative expectations.

**AFAM 350. Studies in the Music of the African Continent and Diaspora. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 6 credits. Prerequisite: MHIS 243 or MHIS/AFAM 250. An in-depth examination of selected topics and issues in African-derived musical and cultural traditions. Crosslisted as: MHIS 350/INTL 370.

**AFAM 356. Government and Politics of Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduces students to the basic outlines of government and politics in Africa. The course will consider such topics as colonialism, elitism and nationalism and modernization strategies. Using the comparative approach, the course will primarily focus on West, East and Central Africa. Crosslisted as: POLI 356/INTL 356.

**AFAM 357. Politics of Southern Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of racial and political developments in the southern tip of Africa. While South Africa will be the primary focus of analysis, other countries in the region such as Zimbabwe, Angola and Mozambique will be studied. Crosslisted as: POLI 357/INTL 357.

**AFAM 358. African Art and Architecture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of African art and architecture from prehistoric times to the present. Special emphasis is placed on form, content, function and meaning, as well as the impact of African art on modern and African-American art. Crosslisted as: ANTH 358.

**AFAM 361. Americans from Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the history and culture of blacks in the United States, designed to analyze some of the most important aspects of black life and the attitudes of the dominant society within which blacks lived. The second semester emphasizes the changing status, expectations and ideologies of black Americans in the 20th century. First semester: to 1877. Second semester: since 1877. Crosslisted as: HIST 361.

**AFAM 362. Americans from Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the history and culture of blacks in the United States, designed to analyze some of the most important aspects of black life and the attitudes of the dominant society within which blacks lived. The second semester emphasizes the changing status, expectations and ideologies of black Americans in the 20th century. First semester: to 1877. Second semester: since 1877. Crosslisted as: HIST 362.

**AFAM 363. African Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A survey of the literature of Africa with particular emphases on fiction and on West Africa. Some attention also will be given to orature. Crosslisted as: ENGL 363/INTL 366.

**AFAM 365. Caribbean Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A survey of West Indian writings. Attention will be given to African, European and Amerindian influences, as well as to the emergence of a West Indian literary tradition. Crosslisted as: ENGL 365/INTL 367.

**AFAM 379. African-American Literature : Beginnings through Through the Harlem Renaissance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. An examination of the culture and literature of African Americans from their roots in Africa and the African Diaspora to the Harlem Renaissance. Authors may include Wheatley, Douglass, DuBois, Hurston, Hughes and Cullen. Crosslisted as: ENGL 379.

**AFAM 387. History of West Africa to 1800. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the transformation of West African societies from early times to 1800, with emphasis on the rise of states and empires, the introduction, spread and impact of Islam, the Atlantic slave trade and its effects, and colonialism. Crosslisted as: HIST 381.

**AFAM 388. Africa: Social, Cultural and Economic History. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of economic, social and cultural developments in Africa from the beginning of the 19th century to the present, with emphasis on agricultural and industrial development, trade, Africa's involvement in the world economy, changes in labor systems, racial dominance, African initiatives and resistance, religion and social evolution, and Africa in world affairs. Crosslisted as: HIST 384.

**AFAM 389. History of Southern Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the history and culture of the peoples of southern Africa. Deals with the areas that presently are the Republic of South Africa, Lesotho, Swaziland, Botswana, Namibia and Zimbabwe. Emphasizes the interaction among the various communities and ethnolinguistic groups in southern Africa. Crosslisted as: HIST 383.

**AFAM 390. Africa and the Americas: Slavery, Gender and Race. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines various aspects of slavery in Africa and selected parts of the African diaspora, including the United States, Canada and the Caribbean, with special emphasis on the role played by race and gender. Topics will include African conditions of servility, the trans-Atlantic trade in enslaved Africans, and chattel slavery, demography, labor, law, discipline, abuse, resistance and status. Crosslisted as: HIST 380/GSWS 390.

**AFAM 392. Caribbean History to 1838. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An exploration of changes in the structure of Caribbean society from the late 15th century to 1838, with emphasis on the development of plantation slavery, social stratification, race, slave resistance, the Haitian Revolution, African cultural patterns and abolition. Crosslisted as: HIST 376.

**AFAM 393. Akhenaten to Cleopatra. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of Egyptian history from the period of the Empire (New Kingdom, c. 1570 B.C.) through the Ptolemaic Age of Cleopatra (c. 30 B.C.). Particular areas of concentration will include the Amarna Period of Akhenaten and various aspects of Egyptian daily life.

**AFAM 394. Service-learning in African American Health. 3 Hours.**  
Semester course; 3 lecture hours. 3 credits. Prerequisite: AFAM 310. Open to African-American studies majors only. Provides an overview of critical public health issues and intervention strategies that may influence life chances and disease susceptibility among African-Americans through a service-learning format.

**AFAM 399. Interdisciplinary Research Methods. 3 Hours.**  
Semester course; 3 lecture hours. 3 credits. Introduces students to the interdisciplinary processes whereby those working in the field develop their arguments and interpretations concerning the black experience. Students will develop increased skills in library research and an awareness of the importance of such methodologies as archaeology, oral history, case studies, participant observations, experiments and surveys. Students will be introduced to the need for critical analysis, the role of biases and frames of references and the reason why scholars working in the field often reach different conclusions with reference to issues of fact, interpretation and significance.

**AFAM 401. African-Americans and the U.S. Health Care System. 3 Hours.**  
Semester course; 3 lecture hours. 3 credits. Prerequisites: AFAM 103, AFAM/SOCY/WMNS/GSWS 305 or permission of the instructor. Explores issues surrounding the disparity in health status and health outcomes between African-Americans and other groups in the United States. Students are required to participate in an experiential exercise designed to enhance learning. Crosslisted as: SOCY 401.

**AFAM 411. Applied Concepts in Africana Studies. 3 Hours.**  
Semester course; 3 lecture hours. 3 credits. Prerequisite: AFAM 111 with a minimum grade of C. Pre- or corequisite: AFAM 399. Explores the processes and challenges involved in studying the experiences of African-descended peoples, with a focus on the development of an idea or observation into a finished and well-executed research product. Investigates how these processes unfold in the works of specific black studies researchers, as they capture the varied consciousnesses, histories and social forces surrounding black life in America, Africa and throughout the diaspora.

**AFAM 413. African and Oceanic Art. 3 Hours.**  
Semester course; 3 lecture hours. 3 credits. A study of the architecture, painting, sculpture and civilizations of the major art-producing tribes of West Africa and Oceania from the 13th century to the present. Crosslisted as: ARTH 350.

**AFAM 416. The Origin and Evolution of the Idea of Race. 3 Hours.**  
Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103 or AFAM 103 or permission of instructor. Explores the origins and social history of the "idea" of race from the Middle Ages to the end of the 20th century. Using both historical and anthropological scholarship, the course presents an analytical framework for race as a sociocultural phenomenon. Crosslisted as: ANTH 416.

**AFAM 420. Women of Africa. 3 Hours.**  
Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103 or AFAM 103. Looks at the traditional roles of women in African Societies and examines how women have coped in different environments. Focuses on the institutionalized aspects of similarities and differences in women's lives in pastoral and horticultural societies and those with mixed economies, and contrasts these with women's roles in large state societies of Africa and in the modern urbanized context. Crosslisted as: ANTH 420/INTL 420.

**AFAM 440. Contemporary Art and Architecture of Africa. 3 Hours.**  
Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 390 with a minimum grade of C. A study of the impact on African art and architecture of colonialism, urbanization and modernization. Special emphasis is placed on the search for a new identity by contemporary African artists. Crosslisted as: ARTH 440.

**AFAM 451. Religion, Racism and Social Justice. 3 Hours.**  
Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 340/INTL 341, WLRD 210 or WRDL 220; UNIV 200 or HONR 200. Explores the complex history and contemporary relationships between religion, racism and social justice. Crosslisted as: INTL 451/RELS 451.

**AFAM 474. Minorities and the Mass Media. 3 Hours.**  
Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 101 with a minimum grade of C. Examines historical and contemporary issues associated with the presence and portrayal of selected minorities in/by mainstream mass media in the United States. Primary emphasis is placed on the examination of African-Americans and Hispanic-Americans. Asian-Americans, Native Americans and women also are covered. Crosslisted as: MASC 474.

**AFAM 491. Topics in African-American Studies. 3 Hours.**  
Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of 9 credits; 3 credits may be applied to the African-American studies minor. An in-depth study of specialized areas of African-American studies.

**AFAM 492. Independent Study. 1-4 Hours.**  
Semester course; variable hours. Variable credit. Maximum 4 credits per semester. Maximum total of 4 credits in all independent study courses. Prerequisites: completion of 12 credits in African-American studies courses; junior or senior standing.

**AFAM 493. Internship in Africana Studies. 1,3 Hour.**  
Semester course; variable hours. 1, 2 or 3 credits. May be repeated for a maximum total of 6 credits. A minimum of 50 hours of work per credit. Permission from the department chair or internship coordinator required. Determination of the amount of credit (based on hours or effort required) and permission of departmental internship coordinator must be obtained prior to registration for the course. Internship credit is restricted to students with a minimum grade point average of 2.5 and junior or senior status. Through a directed internship with a nonprofit organization, business, industry, government or university, the student will serve as an intern in a position that provides a real-life experience working with a population of African descent with the goal of defining, improving, affirming and/or validating black experiences in the African diaspora. Graded pass/fail.

**AFAM 494. Internship in African American Health. 3 Hours.**  
Semester course; 150 clock hours in appropriate organization. 3 credits. Prerequisites: AFAM 310, either AFAM/ANTH/INTL/WMNS/GSWS 309 or AFAM/PSYC 322, and AFAM 394. Applicants must be approved by the internship coordinator. Open to African-American studies majors of senior standing only. Students are placed in organizations that offer supervised work or research experience in a health setting appropriate to their interests. A final report must be submitted upon completion of the internship.

**AFAM 499. Capstone Seminar in Africana Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: AFAM 111, AFAM 211, AFAM 311, AFAM 399 and AFAM 411; and senior standing. Involves the planning and execution of a major research project demonstrating the interdisciplinary processes through which those working in the field of Africana studies use diverse sources to develop their arguments and interpretations.

**American Studies (AMST)****AMST 195. Richmond. 1 Hour.**

15 contact hours. 1 credit. A series of mini-courses dealing with aspects of Richmond's literary and historical importance from the city's beginning to the present.

**AMST 391. Topics in American Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once for credit. Selected issues or problems in American civilization with materials drawn from such areas as history, the social sciences, philosophy, literature, the arts and mass communications.

**AMST 394. Perspectives in American Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 6 credits in American-related courses. An introduction to the methods, significant works and major trends in American studies. May be taken for American literature credit by English majors. May not be used to satisfy the literature requirement of the College of Humanities and Sciences.

**Anthropology (ANTH)****ANTH 103. Introduction to Anthropology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A general survey of anthropology with emphasis on learning about and from global cultures, and on the four fields of anthropology. Crosslisted as: INTL 103.

**ANTH 105. Introduction to Archaeology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of archaeological sites, methods and theories from around the world, from the earliest human cultures, to the rise and spread of civilizations, to the modern era. Crosslisted as: INTL 104.

**ANTH 200. Introduction to African Societies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course introduces the student to the African continent, its peoples and cultures. It covers such general characteristics as the physical and geographical features, climate, topography, traditional economies, languages, religions, social systems and other cultural features that are traditional to its people. Crosslisted as: AFAM 200/INTL 200.

**ANTH 210. Biological Anthropology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103. Explores the disciplinary subfield of biological anthropology. Emphasis on the history and study of humans as biological organisms. Topics include genetic, social and ecological determinants of variation in human growth and biological diversity, as well as human adaptation and adaptability, disease, diet, and nutrition.

**ANTH 220. Cultural Anthropology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103. Explores the disciplinary subfield of social and cultural anthropology. Provides an overview of key themes and theories in the subject, as well as the analytical and methodological tools to critically consider cultural difference, social organization and social change, with reference to a representative range of culture areas and the empirical fields studied by cultural anthropologists.

**ANTH 230. Anthropological Linguistics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103. Explores the disciplinary subfield of anthropological linguistics. Emphasis is on the interactions between language and culture from a comparative perspective, as well as the relationship between language and social identities and relationships. Also an introduction to the field's methodology, research techniques, analytical tools and their applications.

**ANTH 301. Human Evolution. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200 with a minimum grade of C. Introduces the range of human diversity as well as a broad understanding of evolution and evolutionary biology, particularly as it applies to hominid evolution. Specific topics include basic genetics, primatology, paleontology, and growth and development. Crosslisted as: BIOL 341.

**ANTH 302. Archaeological Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH 105/INTL 104 and UNIV 200 or HONR 200 with a minimum grade of C. Covers the basic theoretical perspectives and tools of archaeology, including analysis and interpretation of archaeological materials. Students will review the intellectual history of archaeology, applying a variety of theoretical approaches to archaeological data sets and sites.

**ANTH 303. Archaeological Methods and Research Design. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH 105/INTL 104 and UNIV 200 or HONR 200 with a minimum grade of C. Introduces the basic practices of archaeology, including planning, excavation, artifact analysis, documentary research, mapping, dating sites and artifacts, and interpretation and presentation of findings. Students will participate in an active field research program and will apply methods at an active site and lab.

**ANTH 304. Sociology of Families. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or ANTH 103/INTL 103. The family in its social and cultural context. Analysis of child rearing, marriage, kinship, family crises and family change in various societies around the world. Crosslisted as: SOCY 304/GSW 304.

**ANTH 307. Human Osteology. 4 Hours.**

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: ANTH 210. Corequisite: ANTZ 307. Emphasizes human skeletal development and the identification of specific bones and their anatomical landmarks, including the determination of side for paired bones. Also discussed are methods of estimating age, sex and stature from human skeletal remains and application of human skeletal data to broader anthropological questions.

**ANTH 309. Global Women's Health. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Explores issues in women's health from a national and international perspective with an emphasis on the experiences of women in the African diaspora. Theories in medical anthropology are employed to examine key themes. Crosslisted as: AFAM 309/INTL 309/GSW 309.

**ANTH 310. Forensic Anthropology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 210. A comprehensive overview of forensic anthropology including its development and the theory and methodology on which it is based. Crosslisted as: FRSC 310.



**ANTH 312. History of Human Settlement. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A cultural and historical geography of human migration and settlement over the earth. Topics may include agricultural and urban systems, exploration, colonization and imperialism, and changing relationships with the environment, during and since the Middle Ages. Crosslisted as: URSP 312.

**ANTH 315. Field Methods and Research Design in Cultural Anthropology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103, and ANTH 220 or ANTH 230. Overview of quantitative and qualitative anthropological field techniques as well as the ethical dimension of anthropological fieldwork. Basics of research design, effective methodology and writing grant proposals.

**ANTH 328. Language, Culture and Cognition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 220 or 230. Introduces theoretical and methodological foundations for the study of language from sociocultural perspectives. The perspectives include linguistic, philosophical, psychological, sociological and anthropological contributions to the understanding of verbal and nonverbal communication as a social activity embedded in cultural contexts. No prior training in linguistics is presupposed. Crosslisted as: FRLG 328/ENGL 392/LING 392.

**ANTH 331. Public Culture: Anthropology Through Film. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103; WRLD 230. Explores how anthropology can contribute to a critical analysis of films as cultural representations. Class discussion will relate particular films both to the cultural context they depict and to the cultural context in which they were produced. Will also examine films as images that produce cultural meanings with the potential to affect the viewer's understanding of the world and comprehension of self.

**ANTH 348. South American Ethnography. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. General ethnographic survey of both highland and lowland indigenous cultures of South America and cultural changes as a result of European contact. Crosslisted as: INTL 348.

**ANTH 349. Rethinking a Continent: Latin America. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. This course surveys contemporary cultures of Latin America. It addresses historical sociocultural developments from an anthropological perspective and introduces concepts from social justice studies, development anthropology and applied anthropology. Crosslisted as: INTL 349.

**ANTH 350. Rethinking a Continent: Europe. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. A survey of historical sociocultural developments from an anthropological perspective with an emphasis on integrative and disintegrative forces that have shaped cultures and identities in Europe. Introduces concepts from sociocultural anthropology, social justice studies and applied anthropology. Crosslisted as: INTL 350.

**ANTH 355. Death and Burial. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103 or ANTH 105. Explores beliefs about the dead across time and space, the transformations physical bodies undergo after death and how archaeologists investigate human remains to interpret the beliefs and social practices of past cultures.

**ANTH 364. Mythology and Folklore. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of one or more forms of folklore, such as folktales, fairy tales, legends, myths, proverbs, riddles, ballads and/or games, with some attention to literary, social or historical significance and contexts. This course may also include approaches to collecting material or to examining later literary forms and texts inspired by folklore. Crosslisted as: ENGL 364.

**ANTH 375. Field Archaeology. 6 Hours.**

Semester course; 3 lecture and 8 field and laboratory hours. 6 credits. Introduction to archaeological field and basic laboratory techniques. Archaeological data collection (excavation or survey) forms the core of the course.

**ANTH 380. Medical Anthropology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 210 or 220. An introduction to the biological and cultural anthropological study of global health and well-being, including healing processes, the biosocial relations of healing management and relationships between biomedicine and pluralistic medical systems.

**ANTH 381. Modern Identities: Nation Building. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Critically explores how nation building and national identities have developed over the past two centuries among peoples across the globe. Class discussions will examine theoretical perceptions of these processes and focus on how they shaped and shape realities in different times and places. Crosslisted as: INTL 381.

**ANTH 389. World Archaeology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103 or ANTH 105. Examines the diversity and evolution of human cultures through archaeological practices and techniques.

**ANTH 390. Introduction to Linguistics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. An introduction to methods of language analysis, emphasizing the study of sounds and sound patterns, and units of meaning and their arrangements Crosslisted as: ENGL 390/LING 390.

**ANTH 391. Topics in Anthropology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Maximum 6 credits per semester; maximum total of 18 credits in departmental topics courses that may be applied to the major. Prerequisite: ANTH/INTL 103. Seminar on current specialized areas of anthropological interest. See the Schedule of Classes for specific topics to be offered each semester.

**ANTH 394. Historical Archaeology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 or ANTH 105/INTL 104, and any history course. A review of historical archaeology, recognizing its contemporary emphasis on the spread of European cultures across the globe beginning in the 15th century. Methods and findings of archaeological research from the United States, Europe and Africa will be covered with special emphasis on the study of documents and artifacts related to the emergence and present state of the modern world. Students will participate in field research. Crosslisted as: HIST 390.

**ANTH 398. Field Investigations in Anthropology. 1-8 Hours.**

Semester course; variable hours. 1-8 credits. May be repeated for a maximum of 8 credits. Permission of instructor required. A course involving travel and/or study in an off-campus context. Intended primarily for students participating in directed study abroad programs, the course meets the experiential learning requirement for the anthropology major.



**ANTH 399. Junior Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisites: ANTH 210, 220 or 230; and junior standing. Focuses on self-assessment, compilation of a portfolio and curriculum vitae, career and graduate school preparation, and lifelong application of skills and knowledge acquired in the program. Students will critically assess their experience in the anthropology program.

**ANTH 403. Primatology. 4 Hours.**

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: ANTH 210 or ANTH 301/BIOL 341. Primatology investigates the taxonomic relationships among primates through comparative anatomy, comparative behavior and comparative biochemistry. Study of primate evolution, demography, subsistence, reproduction, social organization, communication systems and ecology. Crosslisted as: BIOL 403.

**ANTH 415. Economic Anthropology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Provides an overview of the anthropological approach to the "economic" in social life. Analyzes the role played by systems of reciprocity and exchange in ethnographic contexts. Concepts employed by anthropologists in the study of traditional subsistence economies are used to examine modern industrialized societies. Crosslisted as: INTL 415.

**ANTH 416. The Origin and Evolution of the Idea of Race. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103 or AFAM 103 or permission of instructor. This course is an exploration of the origins and social history of the "idea" of race from the Middle Ages to the end of the 20th century. Using both historical and anthropological scholarship, the course presents an analytical framework for race as a sociocultural phenomenon. Crosslisted as: AFAM 416.

**ANTH 420. Women of Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103 or AFAM 103. This course looks at the traditional roles of women in African Societies and examines how women have coped in different environments. It focuses on the institutionalized aspects of similarities and differences in women's lives in pastoral and horticultural societies and those with mixed economies, and will contrast these with women's roles in large state societies of Africa and in the modern urbanized context. Crosslisted as: AFAM 420/INTL 420.

**ANTH 425. Religion, Magic and Witchcraft. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. A survey of the nature and variety of beliefs outside of the major streams of religious thought. Among topics considered are myth, totemism, taboo and sorcery. Emphasis on understanding supernatural beliefs and practices in relation to culture and society. Crosslisted as: RELS 425/INTL 425.

**ANTH 448. Language, Culture and Cognition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: three credits in a 200-level literature course (or equivalent). Introduces theoretical and methodological foundations for the study of language from sociocultural perspectives. The perspectives include linguistic, philosophical, psychological, sociological and anthropological contributions to the understanding of verbal and nonverbal communication as a social activity embedded in cultural contexts. No prior training in linguistics is presupposed. Crosslisted as: FRLG 448/ENGL 455/LING 455.

**ANTH 450. Cross-cultural Communication. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of the dynamics of cross-cultural communication that applies linguistic tools to understanding cultural issues and solving communication problems. Crosslisted as: ENGL 454/INTL 454.

**ANTH 454. Theory in Cultural Anthropology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH 220 or ANTH 230, and at least one 3-credit 300-level ANTH course. A study of the connections between theoretical work that addresses understandings of culture and methodological practice centered on creating ethnography.

**ANTH 455. Anthropology of Development and Globalization. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL 101. May be taken for a maximum of nine credit hours in three different world areas. Consists of a global study of the developing Third World with particular emphasis on rural populations, subsistence farmers, indigenous groups and small entrepreneurs. Focuses on development and globalization while providing insights into the peasantry as a class, women in peasant societies, changes in peasant societies and the peasantry as a player in the policies of the modern state. Crosslisted as: INTL 455.

**ANTH 457. Comparative Perspectives on Cultures and Societies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103; UNIV 200 or HONR 200. Examination of the theoretical, methodological and ethical problems that arise from anthropological comparisons of cultures. Crosslisted as: INTL 457.

**ANTH 490. Anthropology Senior Capstone. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: completion of 15 credits in anthropology at the 300 and 400 level or the equivalent; senior standing. Open only to anthropology majors. Explores current research that transects more than one subfield of anthropology. Research foci will be at the discretion of the instructor, but students will explore how the anthropological subfields influence and speak to each other in new translational research, and will assess the emerging literature and scientific questions with a critical and scientific perspective.

**ANTH 491. Advanced Topics in Anthropology. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. Maximum 6 credits per semester with different topics. Prerequisites: ANTH/INTL 103; ANTH 210, 220, or 230; and UNIV 200 or HONR 200. Seminar on current specialized areas of anthropological interest. See the Schedule of Classes for specific topics to be offered each semester. A maximum total of 18 credits in departmental topics courses (including ANTH 391 and 491) may be applied to the major.

**ANTH 492. Independent Study. 1-6 Hours.**

Semester course; variable hours. Variable credit. Maximum of 6 credits per semester; maximum total of 12 credits for all independent study and internship courses. Prerequisites: determination of the amount of credit and permission of the instructor and the group coordinator must be procured prior to enrollment in the course; a minimum GPA of 3.0 in the major. Generally open only to students of junior or senior standing who have acquired at least 12 credits in the anthropology program.

**ANTH 493. Anthropology Internship. 1-3 Hours.**

Semester course; variable hours. 1-3 credits (40 clock hours per credit). May be repeated for a maximum of 6 credits for majors and 3 credits for minors. Prerequisites: completion of 9 credits in anthropology courses at the 300 level or above, and permission of the internship coordinator. Student must be in good academic standing with a minimum major GPA of 2.25. Designed for the advanced student to gain workplace experience in a local, national or international business or agency offering opportunities in anthropological field methods or research.

**ANTH 497. Honors in Anthropology. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. ANTH 497 is a prerequisite for ANTH 498. Design and completion of a long-term research project in the major. The thesis project is the culmination of an advanced course of study within the anthropology program. Under the supervision of a faculty mentor, students must demonstrate a thorough understanding and use of anthropological research techniques and analysis, a knowledge of relevant literature, and sophisticated writing and research abilities. Students must apply to program for participation in honors thesis work. See Bulletin for eligibility criteria and application procedure.

**ANTH 498. Honors in Anthropology. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. ANTH 497 is a prerequisite for ANTH 498. Design and completion of a long-term research project in the major. The thesis project is the culmination of an advanced course of study within the anthropology program. Under the supervision of a faculty mentor, students must demonstrate a thorough understanding and use of anthropological research techniques and analysis, a knowledge of relevant literature, and sophisticated writing and research abilities. Students must apply to program for participation in honors thesis work. See Bulletin for eligibility criteria and application procedure.

**Anthropology Lab (ANTZ)****ANTZ 301. Human Evolution Lab. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: ANTH 301/BIOL 341. Laboratory exercises correlated with ANTH 301/BIOL 341. Exercises emphasize comparative primate and fossil anatomy, morphology and behavior, as well as practice in recognizing and applying evolutionary principles in human evolution. Crosslisted as: BIOZ 341.

**ANTZ 303. Archaeological Methods and Research Design Lab. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: ANTH 303. Laboratory exercises correlated with ANTH 303. Exercises emphasize practical applications of describing, cataloging and analyzing artifacts and faunal and floral remains from archaeological excavations.

**ANTZ 307. Human Osteology Lab. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: ANTH 307. Laboratory exercises correlated with ANTH 307. Exercises will emphasize practical description and identification of human bones and bony morphology, as well as associated soft tissue structures.

**ANTZ 403. Primatology Lab. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: ANTH 403/BIOL 403. Laboratory exercises correlated with ANTH 403/BIOL 403. Exercises will emphasize comparative studies of morphology, behavior and social systems between and among primate groups, as well as the evolution of these characteristics in extant species and populations.

**Arabic (ARBC)****ARBC 101. Elementary Arabic. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of ARBC 101 to enroll in ARBC 102. Elementary grammar, reading, writing and speaking.

**ARBC 102. Elementary Arabic. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of ARBC 101 to enroll in ARBC 102. Elementary grammar, reading, writing and speaking.

**ARBC 201. Intermediate Arabic I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARBC 102 or the equivalent. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading and writing skills.

**ARBC 202. Intermediate Arabic II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARBC 201 or the equivalent. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading and writing skills.

**ARBC 205. Intermediate Conversation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARBC 201. Designed to increase student proficiency in the spoken language through audio-oral exercises, dialogues and conversation.

**ARBC 301. Arabic Creative Expression. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARBC 202 or 205. Designed to develop further all language skills: reading, writing, comprehension and speaking. Course is divided into two parts: (a) language skills (grammar, short stories and poetry) and (b) field project (interaction with native speakers). Both parts include lectures, guest speakers and practicing the language with native speakers from the student body and the community at large.

**ARBC 391. Topics in Arabic: \_\_\_\_ 1-3 Hours.**

Semester course; variable hours. 1-3 credits. Prerequisite: ARBC 202 or equivalent. May be repeated with different topics for a maximum of 9 credits. Conducted in Arabic. An in-depth study of selected topics in Arabic. See the Schedule of Classes for specific topics to be offered each semester.

**Biology (BIOL)****BIOL 101. Biological Concepts. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A topical approach to basic biological principles. Topics include molecular aspects of cells, bioenergetics, photosynthesis, cellular respiration, cellular and organismal reproduction, genetics and evolution, and ecology. Not applicable for credit toward the major in biology.

**BIOL 103. Environmental Science. 4 Hours.**

Hybrid semester course taught mostly online; 3 lecture and 2 laboratory hours. 4 credits. Online presentations, assignments, debates and exams require students to understand situations and ideas that involve scientific, social and economic concepts associated with Earth's environment. Laboratory exercises reinforce major course concepts. Integrates aspects of biology, chemistry, geology, physics and sociology. Topics include ecology, evolution, natural resources, air and water resources, energy and recycling, population biology, and sustainable global societies. Not applicable as a prerequisite for any biology course at the 200 level or above, nor for credit toward the B.S. in Biology. Crosslisted as: ENVS 103.

**BIOL 151. Introduction to Biological Sciences I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Pre- or corequisites: MATH 151 and CHEM 101. Introduction to core biological concepts including cell structure, cellular metabolism, cell division, DNA replication, gene expression and genetics. Designed for biology majors.

**BIOL 152. Introduction to Biological Sciences II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151 and CHEM 101, both with a minimum grade of C. Focuses on evolutionary principles, the role of natural selection in the evolution of life forms, taxonomy and phylogenies, biological diversity in the context of form and function of organisms, and basic principles of ecology. Designed for biology majors.

**BIOL 200. Quantitative Biology. 3 Hours.**

Semester course; 3 lecture hours (delivered online). 3 credits. Prerequisites: BIOL 151 and BIOZ 151 with minimum grades of C; and MATH 151, MATH 200, MATH 201 or satisfactory score on the VCU Mathematics Placement Test within a one-year period immediately preceding the beginning of the course. Enrollment restricted to biology majors and biology minors. An introduction to the application of the scientific method, experimental design and quantitative aspects of biology.

**BIOL 201. Human Biology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 101, 151, or 152, or BIOL/ENVS 103. Fundamentals of human biology, including the structure, function and disorders of human body systems, principles of human genetics and inheritance, human evolution, and the interaction of humans with the environment. Not applicable for credit toward the B.S. in Biology.

**BIOL 205. Basic Human Anatomy. 4 Hours.**

Semester course; 3 lecture and 2 laboratory hours, plus online component. 4 credits. Prerequisites: BIOL 101 and BIOZ 101, BIOL 151 and BIOZ 151, or BIOL 152 and BIOZ 152, each with a minimum grade of C. Restricted to communication arts majors; health, physical education and exercise science majors; pre-health majors in clinical laboratory sciences, clinical radiation sciences, dental hygiene and nursing; students enrolled in the health sciences certificate program; and students in the advising tracks for pre-nursing, pre-occupational therapy, pre-pharmacy and pre-physical therapy and pre-nursing accelerated. Human specimens, models and interactive software are used to study human body structures; emphasis is on the skeleto-muscular aspects. Not applicable for credit toward the B.S. in Biology.

**BIOL 209. Medical Microbiology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 101 and BIOZ 101, BIOL 151 and BIOZ 151, or BIOL 152 and BIOZ 152, each with a minimum grade of C. General principles of microbiology and immunology to provide a thorough understanding of the host-microbe relationship in disease. Not applicable for credit toward the B.S. in Biology.

**BIOL 217. Principles of Nutrition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 101, 151 or 152 with a minimum grade of C, or BIOL/ENVS 103 with a minimum grade of C. An introduction to basic principles of nutrition and their application in promoting growth and maintaining health throughout the life cycle. Not applicable for credit toward the B.S. in Biology.

**BIOL 291. Topics in Biology. 1-4 Hours.**

Semester course; variable hours. Variable credit. Prerequisites: BIOL 151, 152 and BIOZ 151, 152, with minimum grades of C. A study of a selected topic in biology. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**BIOL 300. Cellular and Molecular Biology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151 and 152; BIOZ 151 or LFSC/BNFO 251; BIOZ 152 or LFSC/BNFO 252; CHEM 101 and CHEZ 101, all with a minimum grade of C; BIOL 200, MATH 200, MATH 201, STAT 210, STAT 212, STAT 314 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Biology majors must have completed BIOL 200. Pre- or corequisites: CHEM 102 and CHEZ 102. A study of the molecular biology of the cell as it relates to gene expression, cell signaling, and cell growth and differentiation.

**BIOL 303. Microbiology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 300 with a minimum grade of C. The morphological, biochemical, taxonomic, genetic and evolutionary characteristics of microorganisms with a primary focus on bacteria. Focuses on the structural, mechanical and biochemical adaptations employed by microorganisms in their interactions with host cells and substrates.

**BIOL 307. Aquatic Ecology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 317, CHEM 102 and CHEZ 102, with minimum grades of C. The physical, chemical and especially the biological aspects of freshwater ecosystems.

**BIOL 308. Vertebrate Histology. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: BIOL 300 with a minimum grade of C. Microanatomy of vertebrate cells, tissues and organs and the relationship of structure to function. Laboratory work involves an in-depth study of vertebrate microanatomy at the light microscope level as well as an introduction to techniques used for the preparation of materials for histological study.

**BIOL 309. Entomology. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: BIOL 151, 152 and BIOZ 151, 152, with minimum grades of C. A field-based course that focuses on insect diversification, identification, natural history and basic biology.

**BIOL 310. Genetics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL and BIOZ 151 and BIOL and BIOZ 152, each with a minimum grade of C; and BIOL 200, MATH 200, MATH 201, STAT 210, STAT 212, STAT 314 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Biology majors must have completed BIOL 200. The basic principles of molecular and applied genetics of plants, animals and microorganisms.

**BIOL 312. Invertebrate Zoology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, 152 and BIOZ 151, 152, with minimum grades of C. A survey of the invertebrate animals with emphasis on environmental interactions. A weekend trip to a marine environment is required.

**BIOL 313. Vertebrate Natural History. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, 152 and BIOZ 151, 152, with minimum grades of C. The natural history of vertebrates with emphasis on the species native to Virginia.

**BIOL 314. Animal Reproduction. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL and BIOZ 151, BIOL and BIOZ 152, and BIOL 300, each with a minimum grade of C. Introduction to basic reproductive anatomy and physiology. Examination of the basic factors that affect reproductive performance and how these factors are used to regulate the reproductive processes of domestic animals and humans.

**BIOL 317. Ecology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL and BIOZ 151 and BIOL and BIOZ 152, each with a minimum grade of C; and BIOL 200, MATH 200, MATH 201, STAT 210, STAT 212, STAT 314 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Biology majors must have completed BIOL 200. An introduction to the basic principles of ecology, including interactions among organisms and influences of the physical environment.

**BIOL 318. Evolution. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL and BIOZ 151 and BIOL and BIOZ 152, each with a minimum grade of C; and BIOL 200, MATH 200, MATH 201, STAT 210, STAT 212, STAT 314 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Biology majors must have completed BIOL 200. An exploration of the theoretical and empirical foundations of evolutionary biology with a focus on the processes driving evolutionary change across all of life.

**BIOL 320. Biology of the Seed Plant. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: BIOL and BIOZ 151 and BIOL and BIOZ 152, each with a minimum grade of C. The physiology, structure and adaptation of seed plants.

**BIOL 321. Plant Development. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 300 and 310, each with a minimum grade of C. A survey of the developmental changes that take place during the life cycle of lower and higher plants. Emphasis is placed on the control factors that are involved in regulating the ordered changes which take place during development.

**BIOL 322. Economic Botany. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151 and 152 and BIOZ 151 and 152, or equivalents, with minimum grades of C. This class focuses on plant morphology, anatomy, phytochemistry, growth and reproduction through an examination of the biology of economically and culturally important plants, including crops used for foods and beverages, medicines and drugs, fibers, and timber.

**BIOL 323. Plant Physiology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL and BIOZ 151, BIOL and BIOZ 152, and BIOL 300, or equivalents, with minimum grades of C. An introduction to basic plant physiology, including transport processes, energy production and secondary metabolism with emphasis on adaptations to stress.

**BIOL 325. Fungal Biology. 3 Hours.**

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: BIOL 300 with a minimum grade of C. The basic biology of fungi, including growth, structure, genetics, diversity, the commercial uses of fungi and their importance as model organisms. Also discusses the interactions between fungi and plants and fungi and humans.

**BIOL 332. Environmental Pollution. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: eight credits in biology. The study of pollution in the environment with emphasis on the procedures for detection and abatement. Crosslisted as: ENVS 330.

**BIOL 333. Evolution of the Angiosperms. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, 152 and BIOZ 151, 152, all with minimum grade of C. Application of evolutionary concepts to flowering plants. Topics include speciation concepts, evolution of vegetative and sexual characteristics and an overview of angiosperm diversity to the level of family.

**BIOL 335. Global Change Biology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, BIOL 152, BIOZ 151 and BIOZ 152, all with minimum grade of C. Examines how humans influence biological systems and explores what can be done to adapt to or to mitigate future global change, emphasizing anthropogenic climate change.

**BIOL 341. Human Evolution. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200 with a minimum grade of C. Introduces the range of human diversity as well as a broad understanding of evolution and evolutionary biology, particularly as it applies to hominid evolution. Specific topics include basic genetics, primatology, paleontology, and growth and development. Crosslisted as: ANTH 301.

**BIOL 351. Introduction to Bioinformatics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduction to the basic concepts, tools and possibilities of bioinformatics, the analysis of large bodies of biological information. The course stresses problem-solving and integrative projects, making extensive use of exercises in class that draw on bioinformatics resources on the Web and on local servers. Graded as pass/fail. Crosslisted as: BNFO 301.

**BIOL 380. Introduction to Mathematical Biology. 4 Hours.**

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisites: MATH 200 and BIOL 151, or permission of instructor. An introduction to mathematical biology. Various mathematical modeling tools will be covered and implemented in a range of biological areas. Additionally, the collaborative research process will be presented and discussed. Crosslisted as: BNFO 380/MATH 380.

**BIOL 391. Topics in Biology. 1-4 Hours.**

Semester course; variable hours. Variable credit. Prerequisites: BIOL 151, 152 and BIOZ 151, 152, with minimum grades of C. A study of a selected topic in biology. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**BIOL 392. Introduction to Research. 1 Hour.**

Semester course; 2 lecture/demonstration hours. 1 credit. Prerequisites: UNIV 200 or HONR 200; STAT 210; BIOL 310; BIOL 317; one of the following laboratory experiences: BIOZ 310, BIOZ 317 or BIOZ 476; all with minimum grades of C. An introduction to the scientific process, including the mechanics of problem definition, information gathering and experimental design. Experimentation is discussed in context with methods of data collection and analysis; some basic research techniques are demonstrated. Aims are to prepare the student for future research experiences, and to have the student write detailed research proposals.

**BIOL 395. Directed Study. 1-2 Hours.**

Semester course; variable hours. 1-2 credits. Maximum of 2 credits per semester; maximum total of 6 credits for all independent study courses (BIOL 395, BIOL 492, BIOL 495 and/or BIOZ 395). Prerequisites: BIOZ 151 and BIOZ 152 with minimum grades of C, permission of the Department of Biology and research mentor. Mentors are not limited to faculty members within the Department of Biology, but the context of the research study must be applicable to the biological sciences as determined by the department. Studies should include directed readings, directed experimentation or advanced guided inquiry — all under the direct supervision of a faculty member. A minimum of three hours of supervised activity per week per credit hour is required. Graded as pass/fail.



**BIOL 401. Applied and Environmental Microbiology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 300 and 317, each with a minimum grade of C. The biology and chemical activities of microorganisms (bacteria, algae, virus and fungi) of industrial, pharmaceutical and agricultural importance.

**BIOL 402. Comparative Vertebrate Anatomy. 5 Hours.**

Semester course; 3 lecture and 4 laboratory hours. 5 credits. Prerequisite: BIOL 300 with a minimum grade of C. The evolution of vertebrate forms as demonstrated by anatomical studies of selected vertebrate types.

**BIOL 403. Primatology. 4 Hours.**

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: ANTH 210 or ANTH 301/BIOL 341. Primatology investigates the taxonomic relationships among primates through comparative anatomy, comparative behavior and comparative biochemistry. Study of primate evolution, demography, subsistence, reproduction, social organization, communication systems and ecology. Crosslisted as: ANTH 403.

**BIOL 411. Animal Physiology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 300 and CHEM 301, each with a minimum grade of C. Physiological principles of animal cells, tissues and organs from the viewpoint of chemical and physical phenomena.

**BIOL 413. Parasitology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 300 with a minimum grade of C. The epidemiology and pathological effects of eukaryotic parasites, including parasite life cycles and host-parasite relationships.

**BIOL 415. Mangrove Avian Field Ecology. 4 Hours.**

Semester course; two weeks abroad in Panama (or other tropical location with mangrove forests) followed by class meetings two days per week throughout most of spring semester. 4 credits. Prerequisite: BIOL 317. An immersive study of tropical ecology with a focus on bird ecology and conservation of mangrove ecosystems through a unique blend of rigorous science and community engagement. Two weeks of study abroad, including engagement with local conservation organizations and participation in education outreach with local schools, followed by discussion, data analysis and presentation of progress and research in a public symposium on campus.

**BIOL 416. Ornithology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 317 with a minimum grade of C. Provides an integrative study of birds, including avian evolution and diversity, general anatomy and physiology, behavior, and ecology.

**BIOL 417. Mammalogy. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: BIOL 218 and 317 with minimum grades of C. Study of the characteristics, adaptive radiation and distribution of mammals, with emphasis on North American forms.

**BIOL 422. Forest Ecology. 4 Hours.**

Semester course; 3 lecture hours and 3 laboratory hours. 4 credits. Prerequisite: BIOL 317 with a minimum grade of C. Covers the fundamentals of forest ecology, with a particular emphasis on Virginia's diverse forest ecosystems. Students gain an understanding of the principal controls on forest structure, growth and distribution and relate these principles to sustainable forest management.

**BIOL 425. Field Botany. 3 Hours.**

Semester course; 2 lecture hours and 3 laboratory hours.(60 percent online, 40 percent field/laboratory) 3 credits. Prerequisites: BIOL 310 and BIOL 317, both with minimum grades of C. Online lectures, discussions, reflections and assessments in conjunction with field experience. Explores the effects of environmental conditions on plant morphology and adaptations, with emphasis on plant anatomy, plant physiology and ecology.

**BIOL 430. Invasion Biology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, BIOL 152, BIOZ 151, BIOZ 152 and BIOL 317, all with minimum grade of C. A comprehensive view of the ecology and impacts of invasive species. Integrates the effects of historical human demography, ecological disturbance, natural history, species interactions, barriers to invasion, invasive species management and impacts on natural communities and ecosystems.

**BIOL 431. Introduction to Marine Biology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 317, CHEM 102 and CHEZ 102, with minimum grades of C. An introduction to physical, chemical and geological oceanography and a more detailed treatment of the organisms and ecological processes involved in the pelagic and benthic environments of the world's oceans and estuaries.

**BIOL 435. Herpetology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 317 with a minimum grade of C. The evolution, ecology, structure, taxonomy and behavior of reptiles and amphibians.

**BIOL 438. Forensic Molecular Biology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 310 or equivalent; CHEM 302 and CHEZ 302. Provides an understanding of molecular biology testing methodologies as applied to analysis of forensic samples. Current topics in forensic DNA analysis will include quality assurance, DNA databanking, contemporary research and population genetics. Crosslisted as: FRSC 438.

**BIOL 440. Developmental Biology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 300 and 310, each with a minimum grade of C. Basic principles of developmental biology focused on vertebrate model organisms with an emphasis on the underlying cellular and molecular mechanisms that guide development.

**BIOL 445. Neurobiology and Behavior. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: BIOL 317 with a minimum grade of C. The study of animal behavior stressing ecological, evolutionary and neurobiological approaches.

**BIOL 448. Neuroscience. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 300 with a minimum grade of C. Pre- or corequisite: BIOL 310. An examination of the basic structure of the nervous system, nervous system operation on a cellular and molecular level and the formation of the nervous system during development.

**BIOL 450. Biology of Cancer I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 300 with a minimum grade of C or PHIS 309. An examination of the cellular, molecular and clinical aspects of cancer development, progression and treatment.

**BIOL 451. Biology of Cancer II. 4 Hours.**

Semester course; 1 lecture and 12 laboratory hours. 4 credits. Prerequisites: BIOL 450 and instructor's permission. An examination of the cellular, molecular and clinical aspects of cancer development, progression and treatment.



**BIOL 452. Biology of Drugs. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 300 with a minimum grade of C. Explores how drugs modulate biological signaling pathways to study, cure, enhance and intoxicate organisms. An introduction to basic pharmacology that largely focuses on human pathways and diseases. Topics include major drug classes (cardiovascular, gastrointestinal, etc.) and drugs of abuse (alcohol, marijuana, etc.).

**BIOL 455. Immunology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 300 with a minimum grade of C or PHIS 309. A comprehensive introduction to the immune system of higher animals, emphasizing the molecular and cellular basis for antibody-mediated immunity.

**BIOL 459. Infectious Disease Ecology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, BIOL 152, BIOZ 151, BIOZ 152 and BIOL 317, all with minimum grade of C. A comprehensive and up-to-date overview of the causes and consequences of infectious disease at levels from individual organisms to global scale. Examines the history of infectious disease ecology in human and nonhuman populations. Students learn about the roles of transmission and coevolution in infectious disease ecology and how population models are used to inform management of epidemics and emerging infectious diseases.

**BIOL 460. Human Evolutionary Genetics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 318 or BIOL 341 with a minimum grade of C. The origin and genetic history of modern humans, our historic colonization and migration, the utility of the Human Genome Project, our differences from other primates, adaptation to our environment and disease, and the ethical implications of genetic research in our society.

**BIOL 475. Biology Capstone Seminar: \_\_\_\_\_. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. Prerequisites: BIOL 300, BIOL 310 and BIOL 317 with minimum grades of C; and senior standing. Enrollment restricted to biology majors. Students read assigned topical papers before class, prepare critical analyses, discuss and debate selected positions. See Schedule of Classes for specific topics.

**BIOL 477. Biology Capstone Experience. 0 Hours.**

Semester course; variable hours. 0 credits. Prerequisites: completion of the Biocore with minimum grades of C and 90 hours of undergraduate course work. The following courses qualify as a capstone experience if taken as a co-requisite with this course: BIOL 492 Independent Study, BIOL 493 Biology Internship, BIOL 495 Research and Thesis, BIOL 497 Ecological Service Learning or other courses, including topics courses, that include the core competencies required for a capstone experience and are approved by the chair of the Department of Biology. Graded as Pass/Fail.

**BIOL 480. Animal-Plant Interactions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 317 or BIOL 318 with a minimum grade of C, or permission of the instructor. Ecological and evolutionary consequences of interactions among animals and plants.

**BIOL 489. Communicating Research. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: Completion of the Biocore with minimum grades of C. Corequisite: BIOL 495, senior standing. An opportunity for students to develop skills necessary for effective communication of their research in writing. Includes a variety of seminar discussions and activities including preparation of figures for publication and the crafting of a research paper with correct usage of the primary literature. Students will use this as an opportunity to aid the writing of their thesis for BIOL 495.

**BIOL 490. Presenting Research. 1 Hour.**

Semester course; 1 credit. Prerequisite: Completion of the Biocore with minimum grades of C. Pre- or corequisites: BIOL 492 or 495, and senior standing. Opportunity for students to develop skills necessary for effective oral presentation of their research work. Includes a variety of seminar discussions and activities such as preparation of visual materials and statistical analysis of data. Students will make several oral presentations directly related to their specific BIOL 492 or 495 projects.

**BIOL 491. Topics in Biology. 1-4 Hours.**

Semester course; variable hours. Variable credit. Prerequisite: BIOL 300. A study of a selected topic in biology. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**BIOL 492. Independent Study. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. Maximum of 4 credits per semester; maximum total of 6 credits for all independent study courses (BIOL 395, BIOL 492, BIOL 495 and/or BIOZ 395). A minimum of 2 credits is required for the course to count as a laboratory experience. Prerequisite: minimum grade of C in one of the following courses: BIOZ 310, BIOZ 317 or BIOZ 476; and permission of the chair of the Department of Biology. Projects should include data collection and analysis, learning field and/or laboratory techniques, and/or mastering experimental procedures, all under the direct supervision of a faculty member. A minimum of three hours of supervised activity per week per credit hour is required. A final report must be submitted at the completion of the project.

**BIOL 493. Biology Internship. 1-3 Hours.**

Semester course; variable hours. Variable credit. Maximum of 3 credits per semester; maximum total of 6 credits for all independent study and internship courses. 1 credit awarded for each 100 hours of work experience in professional biology setting. Prerequisites: BIOL 310 or 317 with minimum grades of C; and permission of the chair of the Department of Biology and of the agency, company or organization in which internship will be held. Internship designed to provide laboratory or field experience in an off-campus professional biology setting. A final report must be submitted upon completion of the internship. Graded as pass/fail.

**BIOL 495. Research and Thesis. 1-4 Hours.**

Semester course; variable hours. Variable credit. Maximum of 4 credits per semester; maximum total of 6 credits for all undergraduate research in biology (BIOL 292, 492, 495). A minimum of 2 credits is required for the course to count as a laboratory experience. A minimum of 4 credits is required for honors in biology. Prerequisites: LFSC 301, permission of the supervising faculty member and a research proposal acceptable to the departmental chair. Activities include field and/or laboratory research under the direct supervision of a faculty mentor. A minimum of three hours of supervised activity per week per credit hour is required. Research projects must include experimental design and analysis of data. A written thesis of substantial quality is required upon completion of the research.

**BIOL 496. Biology Preceptorship. 2 Hours.**

Semester course; 2 credits. May be repeated with a different course for a maximum of 4 credits. Prerequisites: completion of the relevant course with a minimum grade of B and a minimum cumulative GPA of 3.0. Permission of instructor and departmental chair required prior to registration. Preceptors assist instructors in lecture (BIOL) or laboratory (BIOZ) courses. Responsibilities vary and may include, but are not limited to, attending class, conducting review sessions and preparing course study/review materials. Graded as pass/fail.

**BIOL 497. Ecological Service Learning. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: BIOL 317 with a minimum grade of C. A service-learning course coupled to course content and material taught in BIOL 317. Students will seek out ecologically relevant opportunities with local, state and federal community partners who will provide experiences to enhance academic enrichment and personal growth and will help foster a sense of civic responsibility. Students must complete a minimum of 20 service-learning hours with community partner(s).

**BIOL 498. Insects and Plants Service-learning. 2 Hours.**

Semester course; 2 laboratory hours. 2 credits. Prerequisite: BIOL 317 or BIOL 318 with a minimum grade of C, or permission of the instructor. A service-learning course related to insect-plant interactions. Field experience with community partners, including public parks, botanical gardens and organic farms. Designed to expand academic instruction, enhance personal growth and foster a sense of civic responsibility. Students must complete a minimum of 40 service-learning hours with a community partner.

**Biology Lab (BIOZ)****BIOZ 101. Biological Concepts Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: BIOL 101, 151 or 152. Laboratory exercise correlated with BIOL 101. Not applicable for credit toward the B.S. in Biology.

**BIOZ 151. Introduction to Biological Science Laboratory I. 1 Hour.**

Semester course; 3 laboratory hours. 1 credit. Pre- or corequisites: BIOL 151, MATH 151 and CHEM 101. Laboratory investigation of cellular metabolism, genetics and molecular biology, with an emphasis on formation and testing of hypotheses. Laboratory exercises will elaborate themes discussed in BIOL 151.

**BIOZ 152. Introduction to Biological Science Laboratory II. 1 Hour.**

Semester course; 3 laboratory hours. 1 credit. Prerequisites: BIOL 151 and BIOZ 151, both with a minimum grade of C. Pre- or corequisites: BIOL 152, MATH 151 and CHEM 101. Laboratory investigation of evolutionary concepts, evolution of organisms, biological diversity and ecology, with an emphasis on formation and testing of hypotheses. Laboratory exercises will elaborate themes discussed in BIOL 152.

**BIOZ 201. Human Biology Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: BIOL 201. Laboratory exercises correlated with BIOL 201 Human Biology. Exercises emphasize the structure, function and disorders of human body systems, principles of human genetics and inheritance, and human evolution and ecology. Not applicable for credit toward the B.S. in Biology.

**BIOZ 209. Medical Microbiology Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: BIOL 209. Techniques to culture, isolate and identify microbes with related topics such as water coliform tests, and antibiotics and disinfectant sensitivity testing. Not applicable for credit toward the B.S. in Biology.

**BIOZ 303. Microbiology Laboratory. 2 Hours.**

Semester course; 4 laboratory hours. 2 credits. Pre- or corequisite: BIOL 303. Laboratory application of techniques and concepts in microbiology. Emphasis is placed on techniques to isolate, culture and identify bacteria; genetics and molecular biology of bacteria; safety and aseptic protocols; assays for antibiotic and disinfectant susceptibility.

**BIOZ 307. Aquatic Ecology Laboratory. 1 Hour.**

Semester course; 3 laboratory hours. 1 credit. Prerequisites: BIOL 317, CHEM 102 and CHEZ 102, with minimum grades of C. Pre- or corequisite: BIOL 307. Laboratory and field studies of the biota of aquatic habitats and their relationship with the environment.

**BIOZ 310. Laboratory in Genetics. 2 Hours.**

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisites: UNIV 200 or HONR 200 with minimum grades of C. Prerequisite or corequisite: BIOL 310. Demonstrates the laws and molecular basis of heredity through exercises and experiments that use a variety of organisms.

**BIOZ 312. Invertebrate Zoology Laboratory. 1 Hour.**

Semester course; 3 laboratory hours. 1 credit. Prerequisites: BIOL and BIOZ 151 and 152, with minimum grades of C. Pre- or corequisite: BIOL 312. A laboratory survey of the invertebrate animals, with emphasis on environment interactions. A weekend trip to a marine environment is required.

**BIOZ 313. Vertebrate Natural History Laboratory. 1 Hour.**

Semester course; 3 laboratory hours. 1 credit. Prerequisites: BIOL and BIOZ 151 and 152, with minimum grades of C. Pre- or corequisite: BIOL 313. Laboratory exercises focusing on the natural history of vertebrates, with emphasis on the species native to Virginia.

**BIOZ 317. Ecology Laboratory. 2 Hours.**

Semester course; 4 laboratory hours. 2 credits. Prerequisites: BIOL and BIOZ 151 and 152, and UNIV 200 or HONR 200; all with minimum grades of C. Pre- or corequisite: BIOL 317. A field-oriented course that provides experience in ecological research, including experimental design, instrumentation, data collection and data analysis.

**BIOZ 321. Plant Development Laboratory. 2 Hours.**

Semester course; 4 laboratory hours. 2 credits. Pre- or corequisite: BIOL 321. An experimental approach applied to a phylogenetic survey of developmental model systems. Observational and experimental protocols will be used to collect data and gather information. Problem-solving skills will be utilized to analyze and present experimental results.

**BIOZ 341. Human Evolution Lab. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: BIOL 341/ ANTH 301. Laboratory exercises correlated with BIOL 341/ ANTH 301. Exercises emphasize comparative primate and fossil anatomy, morphology and behavior, as well as practice in recognizing and applying evolutionary principles in human evolution. Crosslisted as: ANTZ 301.

**BIOZ 391. Topics in Biology Laboratory. 1-4 Hours.**

Semester course; variable hours. Variable credit. Prerequisites: BIOL and BIOZ 151 and 152, with minimum grades of C. Laboratory investigations in a selected topic of biology. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**BIOZ 395. Directed Study. 1-2 Hours.**

Semester course; variable hours. 1-2 credits. Maximum of 2 credits per semester; maximum total of 6 credits for all independent study courses (BIOL 395, BIOL 492, BIOL 495 and/or BIOZ 395). Prerequisites: BIOZ 151 and BIOZ 152 with minimum grades of C, permission of the Department of Biology and research mentor. Mentors are not limited to faculty members within the Department of Biology, but the context of the research study must be applicable to the biological sciences as determined by the department. Studies should include directed readings, directed experimentation or advanced guided inquiry — all under the direct supervision of a faculty member. A minimum of three hours of supervised activity per week per credit hour is required. Graded as pass/fail.

**BIOZ 416. Ornithology Laboratory. 2 Hours.**

Semester course; 4 laboratory hours. 2 credits. Prerequisite: BIOL 317 with a minimum grade of C. Pre- or corequisite: BIOL 416. A field-oriented course that develops basic skills in bird identification by sight and sound for a variety of regional taxa with emphasis on avian anatomy and adaptations for flight. Students conduct an independent or small-group research project on a question of their choice relating to avian ecology or behavior, including experimental design, data collection and analysis, and a final project presentation.

**BIOZ 438. Forensic Molecular Biology Laboratory. 2 Hours.**

Semester course; 3 laboratory hours. 1 credit. Pre- or corequisite: BIOL/FRSC 438. Provides comprehensive coverage of the various types of DNA testing currently used in forensic science laboratories. Students will have hands-on experience with the analytical equipment employed in forensic science laboratories and the techniques for human identification in forensic casework. Students also will explore and practice both scientific writing and writing of DNA case reports. Crosslisted as: FRSZ 438.

**BIOZ 476. Biology Capstone Laboratory. 2 Hours.**

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisite: BIOL 310 with a minimum grade of C, and 90 credit hours of undergraduate course work. Application of basic methods used in cellular and molecular biology to the investigation of topics of current biological interest. Emphasis on experimental design, data collection and analysis, communication skills, critical thinking, and ethical and social responsibility.

**BIOZ 491. Topics in Biology Laboratory. 1-4 Hours.**

Semester course; variable hours. Variable credit. Prerequisites: BIOL 300 with a minimum grade of C. Laboratory investigations in a selected topic of biology. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**Chemistry (CHEM)****CHEM 100. Introductory Chemistry. 3 Hours.**

Semester course; 3 lecture and 1 problem session hour. 3 credits. Prerequisite: students must be eligible to take MATH 131 or higher. A course in the elementary principles of chemistry for individuals who do not meet the criteria for enrollment in CHEM 101; required for all students without a high school chemistry background who need to take CHEM 101-102. These credits may not be used to satisfy any chemistry course requirements in the College of Humanities and Sciences.

**CHEM 101. General Chemistry. 3 Hours.**

Continuous courses; 3 lecture and 1 recitation hour. 3-3 credits. Prerequisite: CHEM 100 with a grade of C or higher, or high school chemistry and a satisfactory combination of Math SAT score and high school GPA. Pre- or corequisite: MATH 151. Prerequisite for CHEM 102: CHEM 101 with a grade of C or higher. Fundamental principles and theories of chemistry, including qualitative analysis.

**CHEM 102. General Chemistry. 3 Hours.**

Continuous courses; 3 lecture and 1 recitation hour. 3-3 credits. Prerequisite: CHEM 100 with a grade of C or higher, or high school chemistry and a satisfactory combination of Math SAT score and high school GPA. Pre- or corequisite: MATH 151. Prerequisite for CHEM 102: CHEM 101 with a grade of C or higher. Fundamental principles and theories of chemistry, including qualitative analysis.

**CHEM 110. Chemistry and Society. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The basic principles of chemistry are presented through the use of decision-making activities related to real-world societal issues. Not applicable for credit toward the B.S. in Chemistry.

**CHEM 112. Chemistry in the News. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The basic principles of chemistry are used to interpret newspaper and magazine articles of current interest relating to chemistry in manufacturing, the global environment and medicine. Not applicable for credit toward the B.S. in Chemistry.

**CHEM 301. Organic Chemistry. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisite: CHEM 102 with a minimum grade of C. Prerequisite for CHEM 302: CHEM 301 with a minimum grade of C. A comprehensive survey of aliphatic and aromatic compounds with emphasis on their structure, properties, reactions, reaction mechanisms and stereochemistry.

**CHEM 302. Organic Chemistry. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisite: CHEM 102 with a minimum grade of C. Prerequisite for CHEM 302: CHEM 301 with a minimum grade of C. A comprehensive survey of aliphatic and aromatic compounds with emphasis on their structure, properties, reactions, reaction mechanisms and stereochemistry.

**CHEM 303. Physical Chemistry. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 309 or CLSE 201 with minimum grades of C, and PHYS 202 or PHYS 208, and MATH 201 or MATH 301 or MATH 307. Ideal and nonideal gases, thermodynamics, free energy and chemical equilibrium.

**CHEM 304. Physical Chemistry. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 303 with a minimum grade of C. Kinetics, solution thermodynamics, heterogeneous equilibria, electrochemistry and introductory biophysical chemistry.

**CHEM 305. Physical Chemistry for the Life Sciences. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 301-302 and CHEM 309 with minimum grades of C; and MATH 200. Concepts and principles of physical chemistry as related to the life sciences, forensic science and the B.S. in science programs. Major topics include thermodynamics of proteins and nucleic acids, enzyme kinetics and spectroscopic techniques useful in biophysical research such as circular dichroism, nuclear magnetic resonance and magnetic resonance imaging.

**CHEM 306. Industrial Applications of Inorganic Chemistry. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 302 and CHEZ 302. Chemical engineering students: EGRC 201 and EGRC 205. A study and analysis of the most important industrial applications of inorganic chemistry, with emphasis on structure/properties correlation, materials and energy balance, availability and logistics of starting materials, economic impact and environmental effects. Crosslisted as: CLSE 306.

**CHEM 309. Quantitative Analysis. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 102 with a minimum grade of C, and MATH 151. Theory and practice of gravimetric, volumetric and instrumental analysis techniques and treatment of multiple equilibria in aqueous solutions.

**CHEM 310. Medicinal Chemistry and Drug Design. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CHEM 302. This course is designed to expose undergraduate chemistry, biology and pre-medicine majors to the history, theory and practice of medicinal chemistry. The course will emphasize a combination of fundamentals and applications of drug design. In particular, the molecular aspects of drug action will be discussed. Special emphasis will also be placed on the methods used by medicinal chemists to design new drugs. Crosslisted as: MEDC 310.

**CHEM 320. Inorganic Chemistry I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 101-102 with minimum grades of C. A systematic, unified study of the structures, properties, reactions and practical applications of inorganic compounds.

**CHEM 350. Guided Inquiry in Chemistry. 1.5 Hour.**

Semester course; 1.5 lecture hours. 1.5 credits. Prerequisites: CHEM 101-102 with minimum grades of B. Student facilitators lead recitation sections using guided inquiry, group-based activities. Introduces students to the principles of guided inquiry, active learning and collaborative learning in chemistry through practical, hands-on class work, discussions, readings and a final project.

**CHEM 351. Chemistry Preceptorship. 1.5 Hour.**

Semester course; 1.5 lecture hours. 1.5 credits. Course may be repeated once for a total of 3 credits. Prerequisites: completion of relevant course with minimum grade of C, completion of CHEM 350 with a grade of B and permission of course instructor and departmental chair. Student facilitators lead recitation sections or laboratories in chemistry courses. Responsibilities vary and may include, but are not limited to, attending all classes, holding weekly review sessions or office hours and/or routine grading. A weekly reflection journal and final project are required.

**CHEM 391. Topics in Chemistry. 1-4 Hours.**

Semester course; variable hours. Variable credit. Maximum of 4 credits per semester; maximum total of 6 credits for all chemistry topics courses may be applied to the major. Prerequisites: CHEM 101-102 and CHEZ 101, 102. A study of a selected topic in chemistry. See the Schedule of Classes for specific topics to be offered each semester.

**CHEM 392. Directed Study. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. May be repeated for a maximum total of 8 credits; only 3 credits are applicable to the chemistry major. Prerequisites: CHEM 102 and CHEZ 101 and 102. The independent investigation of chemical problems through readings and experimentation under the supervision of a research adviser. Written interim and final reports are required.

**CHEM 398. Professional Practices and Perspectives Seminar. 1 Hour.**

Seminar course; 1 lecture hour. 1 credit. Prerequisites: completion of 18 credits in chemistry. Seminar course for students considering careers in chemistry-related fields covering topics such as scientific professionalism and ethics, and using chemical literature.

**CHEM 401. Applications of Instrumental Techniques in Organic and Forensic Chemistry. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: CHEM 302 and CHEZ 302. Theory and laboratory practice of instrumental and chemical methods applied to the analysis of organic compounds with emphasis on applications in forensic chemistry.

**CHEM 403. Biochemistry I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 302 with a minimum grade of C. A presentation of structural biochemistry, enzymology, biophysical techniques, bioenergetics and an introduction to intermediary metabolism.

**CHEM 404. Biochemistry II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CHEM 403 with a minimum grade of C. A presentation of metabolism and its regulation as integrated catabolism and anabolism of molecules that are essential to life.

**CHEM 406. Inorganic Chemistry II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 304 and 320. An advanced study of inorganic chemistry, including inorganic spectroscopy, organometallic compounds and catalysis, and bioinorganic systems.

**CHEM 409. Instrumental Analysis. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 303 and 309, and CHEZ 309. Theory and practice of modern spectrophotometric, electroanalytical and chromatographic and nuclear magnetic resonance methods.

**CHEM 491. Topics in Chemistry. 1-4 Hours.**

Semester course; variable hours. Variable credit. Maximum of 4 credits per semester; maximum total of 6 credits for all chemistry topics courses may be applied to the major. Prerequisites: CHEM 102 and CHEZ 101 and 102. A study of a selected topic in chemistry. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**CHEM 492. Independent Study. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. May be repeated for a maximum total of 8 credits; only 3 credits are applicable to the chemistry major. Prerequisites: CHEM 102 and CHEZ 101 and 102. The independent investigation of chemical problems through readings and experimentation under the supervision of a research adviser. Written interim and final reports required.

**CHEM 493. Chemistry Internship. 1-3 Hours.**

Semester course; variable hours. Variable credit. Maximum of 3 credits; 1 credit will be given for each 150 hours (approximately one month) of part-time or full-time chemical work experience. Prerequisites: CHEM 102 and CHEZ 101 and 102. Acquisition of chemistry laboratory experience through involvement in a professional chemistry setting. Written progress and final reports will be required.

**CHEM 498. Honors Thesis. 1 Hour.**

Semester course; 1 credit. Prerequisites: completion of 29 credits in chemistry, including CHEM 398 and at least six credits of CHEM 492. Students submit to the Department of Chemistry a thesis based on their independent study research. Students also present their results to the department as a research seminar.



## Chemistry Lab (CHEZ)

### **CHEZ 101. General Chemistry Laboratory I. 1 Hour.**

Semester course; 1 lecture and 2 laboratory hours. 1 credit. Pre- or corequisite: CHEM 101. Experimental work correlated with CHEM 101 with selected forensic science applications. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

### **CHEZ 102. General Chemistry Laboratory II. 1 Hour.**

Semester course; 1 lecture and 2 laboratory hours. 1 credit. Prerequisites: CHEM 101 and CHEZ 101 with minimum grades of C. Pre- or corequisite: CHEM 102. Experimental work includes qualitative analysis with selected forensic science applications. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

### **CHEZ 110. Chemistry and Society Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: CHEM 110. Experimental work correlated with CHEM 110. Not applicable for credit toward the B.S. in Chemistry. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

### **CHEZ 301. Organic Chemistry Laboratory I. 2 Hours.**

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 102 and CHEZ 102 with minimum grades of C. Pre- or corequisite: CHEM 301. Experimental work correlated with CHEM 301. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

### **CHEZ 302. Organic Chemistry Laboratory II. 2 Hours.**

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 301 and CHEZ 301 with minimum grades of C. Pre- or corequisite: CHEM 302. Experimental work correlated with CHEM 302. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

### **CHEZ 303. Physical Chemistry Laboratory I. 2 Hours.**

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 102 and CHEZ 102. Pre- or corequisites: CHEM 303, 309 and CHEZ 309. This course covers experiments in calorimetry, molecular and thermodynamic properties of gases and liquids, surfaces, electrochemistry, equilibria, polymers, phase diagrams, and biophysical chemistry. Extensive report writing, laboratory notebook writing and statistical analysis of data are emphasized. A final project may be required.

### **CHEZ 304. Physical Chemistry Laboratory II. 2 Hours.**

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 303, 309 and CHEZ 303, 309. Pre- or corequisite: CHEM 304. This course covers experiments in absorption and emission spectroscopy, infrared and Raman spectroscopy, NMR spectroscopy, kinetics, photochemistry, biophysical chemistry and modeling. Report writing, laboratory notebook writing and statistical analysis of data are emphasized. A final project may be required.

### **CHEZ 309. Quantitative Analysis Laboratory. 1 Hour.**

Semester course; 1 lecture and 3 laboratory hours. 1 credit. Prerequisites: CHEM 102 and CHEZ 102 with minimum grades of C. Pre- or corequisite: CHEM 309. Laboratory associated with quantitative analysis. Includes practice in volumetric and instrumental laboratory techniques as applied to measurement sciences.

### **CHEZ 406. Inorganic Chemistry Laboratory. 2 Hours.**

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisites: CHEM 320 and CHEZ 102. Pre- or corequisite: CHEM 406. Examination of inorganic nonmetal, transition metal and organometallic compounds using modern inorganic methods of synthesis and characterization. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory upon withdrawal or for other reasons will incur a charge billed from the Student Accounting Department.

### **CHEZ 409. Instrumental Analysis Laboratory. 2 Hours.**

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 302, 304 and 309 with minimum grades of C; CHEZ 303 and 309 with minimum grades of C. Pre- or corequisite: CHEM 409. Practice of electrochemical, spectroscopic and chromatographic methods of analysis.

## Chinese (CHIN)

### **CHIN 101. Elementary Chinese. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of CHIN 101 to enroll in CHIN 102. Elementary grammar, reading and oral drill.

### **CHIN 102. Elementary Chinese. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of CHIN 101 to enroll in CHIN 102. Elementary grammar, reading and oral drill.

### **CHIN 110. Intensive Elementary Chinese. 8 Hours.**

Semester course; 10 lecture and 10 laboratory hours. 8 credits. This intensive course combines CHIN 101 and 102 into a single-semester class. Students may receive credit toward graduation for either the CHIN 101-102 series or CHIN 110, but not both.

### **CHIN 201. Intermediate Chinese. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisite: completion of CHIN 201 to enroll in CHIN 202. Rapid review of the essentials of grammar, conversation and readings from Chinese literature.

### **CHIN 202. Intermediate Chinese. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisite: completion of CHIN 201 to enroll in CHIN 202. Rapid review of the essentials of grammar, conversation and readings from Chinese literature.

### **CHIN 210. Intensive Intermediate Chinese. 6 Hours.**

Semester course; 6 lecture hours. 6 credits. This intensive course combines CHIN 201 and 202 into a single-semester class. Students may receive credit toward graduation for either the CHIN 201-202 series or CHIN 210, but not both.

### **CHIN 300. Chinese Vocabulary and Reading. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: completion of Chinese courses through the intermediate level or equivalent. Designed to increase written vocabulary and reading skills through an examination and discussion of literary works by famous Chinese writers. Conducted in Chinese.



**CHIN 301. Practical Chinese Writing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: completion of Chinese courses through the intermediate level or equivalent. Designed to develop students' writing techniques and skills in several types of technical writing in Chinese (business, financial and law documents, memos and resumes). Conducted in Chinese.

**CHIN 391. Topics in Chinese. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. May be repeated with different topics for a maximum of 16 credits. Prerequisite: CHIN 202 or 210. An in-depth study of selected topics in Chinese. See the Schedule of Classes for specific topics to be offered each semester.

## English (ENGL)

**ENGL 201. Western World Literature I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. An introduction to the literature of Western cultures from the ancient world through the Renaissance, emphasizing connections among representative works.

**ENGL 202. Western World Literature II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. An introduction to the literature of Western cultures from the end of the Renaissance to the present, emphasizing connections among representative works.

**ENGL 203. British Literature I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. An introduction to the literature of the British Isles from the Middle Ages through the 18th century, emphasizing connections among representative works.

**ENGL 204. British Literature II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. An introduction to the literature of the British Isles from the late 18th century to the present, emphasizing connections among representative works.

**ENGL 205. American Literature I. 3 Hours.**

Semester courses; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. An introduction to the literature of the United States from its origins through the 1860s, emphasizing connections among representative works.

**ENGL 206. American Literature II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. An introduction to the literature of the United States from the 1860s to the present, emphasizing connections among the representative works.

**ENGL 211. Contemporary World Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. A study of selected literature published in the past 25 years and chosen from a number of different nations and cultures. Crosslisted as: INTL 211.

**ENGL 215. Textual Analysis. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An inquiry into literary texts, emphasizing critical thinking and close reading. Individual sections will focus on a unifying question or problem. Students will study selected texts and their times with an emphasis on developing skills in one or more of the following areas: reading, writing, research and/or oral communication.

**ENGL 236. Women in Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. An introduction to literature by and/or about women. Crosslisted as: GSWS 236.

**ENGL 291. Topics in Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Maximum 6 credits in all topics courses at the 200 level. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. An introduction to literature through the in-depth study of a selected topic or genre. See the Schedule of Classes for specific topics to be offered.

**ENGL 295. The Reading and Writing of Fiction and Poetry. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to the basic elements of writing poetry and fiction, using published examples of contemporary fiction and verse as guides in the study of literary form and the production of original creative writing. Students will be offered a practitioner's perspective on genre conventions and the process of revision.

**ENGL 301. Introduction to the English Major. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 or HONR 200, and ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. Study of literature focused on skills helpful in the English major, introducing students to the ways in which language is used in literary texts and to the practice of writing responses to those texts. Texts will represent at least two genres (drama, poetry, prose). This course should be taken at the beginning of the student's major, preferably before completing more than six hours of other upper-level English courses. Majors are required to take ENGL 301; they must achieve a minimum grade of C to complete the requirement.

**ENGL 302. Legal Writing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 or HONR 200, and ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. Intensive practice in writing on subjects related to law or legal problems. Emphasis on organization, development, logical flow and clarity of style. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. Crosslisted as: CRJS 302.

**ENGL 303. Writing for Stage and/or Screen. 3 Hours.**

Semester course; 3 workshop hours. 3 credits. Prerequisites: UNIV 200 or HONR 200, and ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A workshop in playwriting or screenwriting primarily for students who have not yet completed a full-length dramatic work. Students will present a portfolio of work at the end of each course.

**ENGL 304. Advanced Writing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 or HONR 200, and ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. An advanced study of informative and persuasive prose techniques, with attention to the relationships among content, form and style. May not be used to satisfy the literature requirement of the College of Humanities and Sciences.

**ENGL 305. Writing Poetry. 3 Hours.**

Semester course; 3 workshop hours. 3 credits. Prerequisites: UNIV 200 or HONR 200, and ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. An introduction to the craft of writing poetry. Students will explore the elements of poetic technique and produce a volume of quality work.

**ENGL 307. Writing Fiction. 3 Hours.**

Semester course; 3 workshop hours. 3 credits. Prerequisites: UNIV 200 or HONR 200, and ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A fiction workshop primarily for students who have not produced a portfolio of finished creative work. Students will present a collection of their work at the end of each course.

**ENGL 309. Writing Creative Nonfiction. 3 Hours.**

Semester course; 3 workshop hours. 3 credits. Prerequisites: UNIV 200 or HONR 200, and ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A creative nonfiction workshop primarily for students who have not produced a portfolio of finished creative work. Students will present a collection of their work at the end of each course.

**ENGL 310. Business and Technical Report Writing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 or HONR 200, and ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. Development of critical writing skills used in business, science, technology and government, including instructions, descriptions, process explanations, reports, manuals and proposals. The course will include such topics as communication theory, technical style, illustrations, formats for proposals, reports and manuals. Crosslisted as: MGMT 327.

**ENGL 311. Introduction to Literary Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. Introduces students to the variety of critical methods that are sometimes employed — often subconsciously or habitually — in writing about literature. Requires students to think abstractly and theoretically about the nature of the literary text, but it also gives students valuable practice in mastering different critical methods through close engagements with short stories, poems and plays.

**ENGL 320. Early Literary Traditions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of early and medieval literature such as epic, romance, saga or lyric poetry written in England or influencing English literature prior to 1500.

**ENGL 321. English Drama From 900 to 1642. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of the origin of the English drama and its development until the closing of the theaters in 1642, exclusive of Shakespeare.

**ENGL 322. Medieval Literature: Old English to Middle English. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of texts in Old and Middle English, and the literary and cultural traditions that influence the rise of English literature over 500 years from the early to the High Middle Ages, or from Bede and Beowulf to Chaucer.

**ENGL 324. Late Medieval Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. An introduction to the literature of the 15th and 16th centuries. Works surveyed will likely include those of Langland, Julian of Norwich, Kempe, Malory, Henryson, Skelton, More, Tyndale, Foxe, Surrey, Spenser and Sidney.

**ENGL 325. Early Modern Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. An introduction to the literature of the 16th and 17th centuries, which may include Sidney, Spenser, Donne, Jonson, Lanyer, Wroth, Phillips, Cavendish, Bradstreet, Hutchinson, Milton and Bunyan.

**ENGL 326. Shakespeare in Context. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. Examines selected works of Shakespeare in historical, political, sociocultural, literary and/or other contexts.

**ENGL 330. Restoration and 18th-century Drama. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of English drama from 1660-1777, usually including the comedy of manners, sentimental comedy, ballad opera, farce and heroic and bourgeois tragedy.

**ENGL 331. Restoration and 18th-century British Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A survey of representative poetry, drama and prose from the Restoration and 18th century, usually including Behn, Dryden, Pope, Swift, Johnson and Gay.

**ENGL 332. 18th-century British Novels and Narratives. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of the British narratives in the long 18th century, usually including Defoe, Richardson, Fielding, Burney, Sterne, Austen, Radcliffe and Walpole.

**ENGL 335. British Literature of the Romantic Era. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. Exploration of the literature and the cultural phenomenon of Romanticism in Britain during the years 1783-1832, with reading from poets such as Blake, Wordsworth, Byron and Shelley, and from a variety of other writers.

**ENGL 336. 19th-century British Novels and Narratives. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of British narratives of the 19th century, usually including Austen, Dickens, Thackeray, the Brontes, George Eliot and Hardy.

**ENGL 337. Victorian Poetry. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A survey of the poetry of Victorian Britain, usually including Tennyson, the Brownings, Arnold and the pre-Raphaelites.

**ENGL 340. Early 20th-century British Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. Representative British and Irish poetry, fiction and drama of the early 20th century, including such writers as Yeats, Joyce, Shaw, Lawrence, Conrad, Auden, Forster and Woolf.

**ENGL 341. British Literature and Culture After 1945. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A British studies course that surveys writing in Britain and Ireland since the mid-20th century, with emphasis on social, economic and ideological contexts. Includes such authors as William Golding, Doris Lessing, Seamus Heaney, Harold Pinter, Philip Larkin, Iris Murdoch, Kazuo Ishiguro, Salman Rushdie and Carol Ann Duffy.

**ENGL 342. The Modern Novel. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. An examination of the novel, chiefly British and European, in the 20th century.

**ENGL 343. Modern Poetry. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of British and American poetry in the first half of the 20th century.

**ENGL 344. Modern Drama. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of the development of Continental, English and American drama since Ibsen.

**ENGL 345. Contemporary Poetry. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of British and American poetry from approximately 1945 to the present for the purpose of determining the aesthetic and thematic concerns of contemporary poets.

**ENGL 347. Contemporary Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of internationally prominent texts in various genres produced during the past 30 years. Familiarizes students with distinctive properties of literary expression that have emerged in this period, such as the political, historical, economic and social influences that have shaped literary production.

**ENGL 352. Feminist Literary Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. The study of contemporary feminist thought and feminist approaches to analyzing literature and culture. This course examines the history and development of feminist theory as a methodology in the humanities, explores several of the major theoretical trends of the past 30 years and examines applications of feminist theory to specific works of literature. Crosslisted as: GSWS 352.

**ENGL 353. Women Writers. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once when different groups of writers are studied. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of selected literature written by women and about women writers. Crosslisted as: GSWS 353.

**ENGL 354. Lesbian Texts/Queer Theories. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of queer literature and theory, focusing on writing about female same-sex desire. Explores the idea of a "lesbian subject" and a "lesbian text" through directed study of literature, film, history and theory. Considers issues of aesthetics, politics, authorship and interpretive communities and examines the intersection of social identities with particular attention to race/ethnicity, sex/gender, class and nationality. Crosslisted as: GSWS 354.

**ENGL 355. African-American Women Writers. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. Surveys the African-American women's literary tradition from slavery to the present. Explores the variety of ways African-American women writers gained self-expression in the midst of gender and race oppression. Also explores the rise of black feminist discourse in the U.S. as a project of reclaiming and giving voice to writers who had previously been silenced or suppressed.

**ENGL 361. The Bible as Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Literary aspects of the Bible will be considered. Also, attention will be given to the history of the English Bible. Crosslisted as: RELS 361.

**ENGL 363. African Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A survey of the literature of Africa with particular emphases on fiction and on West Africa. Some attention also will be given to orature. Crosslisted as: AFAM 363/INTL 366.

**ENGL 364. Mythology and Folklore. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of one or more forms of folklore, such as folktales, fairy tales, legends, myths, proverbs, riddles, ballads and/or games, with some attention to literary, social or historical significance and contexts. This course may also include approaches to collecting material or to examining later literary forms and texts inspired by folklore. Crosslisted as: ANTH 364.

**ENGL 365. Caribbean Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A survey of West Indian writings. Attention will be given to African, European and Amerindian influences, as well as to the emergence of a West Indian literary tradition. Crosslisted as: AFAM 365/INTL 367.

**ENGL 366. Writing and Social Change: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture/workshop hours. 3 credits. May be repeated once for credit with a different topic. Prerequisite: three credits in a 200-level literature course (or equivalent). A focused study of the literatures of underserved communities such as those of prisoners, recovering addicts, inner-city teens or immigrants. Students will collaborate with one such community on an original writing project.

**ENGL 367. Writing Process and Practice. 3 Hours.**

Semester course; 3 lecture/workshop hours. 3 credits. Prerequisites: UNIV 200 or HONR 200, and ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. Joins writing theory to writing practice. Students will explore their own writing practice and expand their knowledge of rhetorical processes and the teaching/learning of writing. Covers readings and investigations into theories about writing and the writing process, as well as the principles of working one-on-one with student writers. In the latter part of the semester students will devote two hours per week to peer consulting in the Writing Center.

**ENGL 368. Nature Writing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of the literary genre of nature writing in English. Crosslisted as: ENVS 368.

**ENGL 369. Illness Narratives. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An overview of the history, interpretations and practices of reading and writing illness narratives — through case studies and theoretical perspectives, in fictionalized and nonfiction accounts, from the viewpoint of various actors (doctors, patients, patient families and their caregivers). Students will further examine the role of narrative knowledge in health care. Crosslisted as: SCTS 301.

**ENGL 371. American Literary Beginnings. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of the most important writings from the founding of the first colonies to the establishment of the federal government with attention to such authors as Bradford, Byrd, Bradstreet, Equiano, Cabeza de Vaca and Franklin.

**ENGL 372. U.S. Literature: 1820-1865. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of the writings of American authors in the middle decades of the 19th century, with attention to such authors as Poe, Emerson, Thoreau, Stowe, Hawthorne, Melville, Douglass and Whitman.

**ENGL 373. U.S. Literature: 1865-1913. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of writings from the end of the Civil War to World War I, with attention to such authors as Dickinson, Clemens, Howell, James, Wharton, Crane, Norris, Dreiser, Chopin and Chesnutt.

**ENGL 374. U.S. Literature: Modernism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of the most important writings between World War I and World War II, with attention to such authors as Anderson, Frost, Eliot, Stein, Glasgow, Fitzgerald, Wright, Cather, Hemingway, O'Neill, Hurston, Toomer and Faulkner.

**ENGL 375. U.S. Literature After 1945. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of American writings since the end of World War II, with attention to such authors as Albee, Baldwin, Carver, Coover, Ellison, Erdrich, Ginsberg, Lowell, Morrison, Plath, Pynchon, Salinger and Walker.

**ENGL 377. 19th-century U.S. Novels and Narratives. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of selected novels with some attention to other forms of narrative that reflect the experiences of diverse groups in the United States.

**ENGL 378. 20th-century U.S. Novels and Narratives. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of selected novels with some attention to other forms of narrative that reflect the experiences of diverse groups of the United States.

**ENGL 379. African-American Literature : Beginnings Through the Harlem Renaissance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. An examination of the culture and literature of African Americans from their roots in Africa and the African Diaspora to the Harlem Renaissance. Authors may include Wheatley, Douglass, DuBois, Hurston, Hughes and Cullen. Crosslisted as: AFAM 379.

**ENGL 380. Southern Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of the literature of the South with attention to writers such as Byrd, Poe, Chopin, Faulkner, Welty, Wolfe, O'Connor, Walker and Percy.

**ENGL 381. Multiethnic Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of the literature and culture of multiethnic writers in the United States. May include Native American, Latino/a, African-American, Asian-American and/or Jewish-American authors.

**ENGL 382. African-American Literature: Realism to the Present. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. An examination of the culture and literature of African-Americans from the Harlem Renaissance to the present day. Authors may include Wright, Ellison, Hayden, Brooks, Walker, and Morrison.

**ENGL 385. Fiction into Film. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of the translation of literature into film. Topical approaches vary from semester to semester. Consideration is given to the literature in its original form and to the methods of translating it into film.

**ENGL 386. Children's Literature I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. Designed to give students an appreciation of children's literature; includes biography, fable, myth, traditional and modern fanciful tales and poetry, as well as a survey of the history of children's literature. Crosslisted as: TEDU 386.

**ENGL 387. Literature for Adolescents. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. Designed to acquaint the prospective middle and secondary school English teacher with the nature, scope and uses of adolescent literature. The student is acquainted with reading materials for meeting the varied needs and interests of adolescents. Crosslisted as: TEDU 387.

**ENGL 388. Writing in the Workplace. 3 Hours.**

Semester course; 3 lecture/workshop hours. 3 credits. Prerequisites: UNIV 200 or HONR 200 and ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. Advance study and practice of writing in fields such as technology, science, administration and government, including visual rhetoric in both print and electronic forms.

**ENGL 389. The Teaching of Writing Skills. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Studies the theory and methods for teaching writing to students in middle and secondary schools. Teaches strategies for prewriting, composing, peer revision, evaluation and topic construction. Includes extensive journal and essay writing. Crosslisted as: TEDU 389.

**ENGL 390. Introduction to Linguistics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. An introduction to methods of language analysis, emphasizing the study of sounds and sound patterns and units of meaning and their arrangements. Crosslisted as: LING 390/ANTH 390.

**ENGL 391. Topics in Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Maximum of 12 credits in all topics courses at the upper level. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. An in-depth study of a literary genre, an aesthetic or cultural theme in literature, or of a major writer in English or American literature. See the Schedule of Classes for specific topics to be offered each semester.

**ENGL 392. Language, Culture and Cognition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 220 or 230. Introduces theoretical and methodological foundations for the study of language from sociocultural perspectives. The perspectives include linguistic, philosophical, psychological, sociological and anthropological contributions to the understanding of verbal and nonverbal communication as a social activity embedded in cultural contexts. No prior training in linguistics is presupposed. Crosslisted as: ANTH 328/FRLG 328/LING 392.



**ENGL 401. Shakespeare. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once for credit. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. Advanced study of Shakespeare's works. May focus on a specific genre (tragedies, comedies, romances, histories, lyrics, narrative poems) or period of Shakespeare's career.

**ENGL 402. Chaucer. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of "The Canterbury Tales," with some attention to the early works.

**ENGL 403. Milton. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of shorter poems, selected prose, "Paradise Lost" and "Samson Agonistes."

**ENGL 407. Medieval Epic and Romance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: three credits in a 200-level literature course (or equivalent). A study of the vernacular epic and romance in England and on the continent prior to 1500.

**ENGL 410. Medieval Studies: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. Studies in the English language and literature of the Middle Ages in its cultural context.

**ENGL 411. Early Modern Studies: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. Studies in the language, literature and culture of early modern Britain, ca. 1500 to 1700.

**ENGL 412. 18th-century Studies: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of six credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. Studies in the literature, language and culture of the 18th century in Britain and/or the United States.

**ENGL 413. 19th-century Studies: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. Studies in the literature, language and culture of the 19th century in Britain and/or the United States.

**ENGL 414. 20th-century Studies: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. Studies in the literature, language and culture of the 20th century in Britain, the United States and/or elsewhere in the Anglophone world.

**ENGL 423. ENGLISH DRAMA: 900-1642. 3 Hours.****ENGL 424. RESTORATION & 18TH CENT DRAMA. 3 Hours.****ENGL 426. ADVANCED PLAYWRITING. 3 Hours.****ENGL 433. Advanced Dramatic Writing. 3 Hours.**

Semester course; 3 workshop hours. 3 credits. May be repeated once for credit. Prerequisite: ENGL 303. A practical approach to the creation of original scripts for theatre or film. Crosslisted as: THEA 426.

**ENGL 435. Advanced Poetry Writing. 3 Hours.**

Semester course; 3 workshop hours. 3 credits. May be repeated once for credit. Prerequisite: ENGL 305. Study of the craft of writing, with instruction and guidance toward constructive self-criticism. Workshop members will be expected to produce a substantial volume of quality work and to become proficient in critical analysis in order to evaluate and articulate the strength of their own poetry. May not be used to satisfy the literature requirement of the College of Humanities and Sciences.

**ENGL 437. Advanced Fiction Writing. 3 Hours.**

Semester course; 3 workshop hours. 3 credits. May be repeated once for credit. Prerequisite: ENGL 307. Study the craft of fiction writing, with instruction and guidance toward constructive self-criticism. Workshop members will be expected to produce a substantial volume of short stories or portion of a novel and to become proficient in the critical analysis of fiction in order to evaluate and articulate the strength of their own work. May not be used to satisfy the literature requirement of the College of Humanities and Sciences.

**ENGL 439. Advanced Creative Nonfiction Writing. 3 Hours.**

Semester course; 3 workshop hours. 3 credits. May be repeated once for credit. Prerequisite: ENGL 309. Advanced study of the craft of creative nonfiction writing, with instruction and guidance toward constructive self-criticism. Workshop members will be expected to produce a substantial volume of writing or a portion of a book-length work of nonfiction, and to become proficient in the critical analysis of literary nonfiction in order to evaluate and articulate the strength of their own work.

**ENGL 445. Form and Theory of Poetry. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of the poetics, including prosody, with attention to the nature and functioning of language in poetry (especially metaphor), the development of poetic genres and the process by which poems are created and come to have meaning.

**ENGL 447. Form and Theory of Fiction. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of narration in verbal and other media, with attention to the nature, organization and functioning of language in narrative, the development of narrative genres, and the process by which narratives are created and come to have meaning.

**ENGL 449. Form and Theory of Creative Nonfiction. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. An examination of one or more types of creative nonfiction. These may include magazine articles, research-based reportage, New Journalism, memoir, biography, autobiography, the meditative essay, the personal essay and others. May also include creative writing in the genre.

**ENGL 450. Modern Grammar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. Study of modern English grammar and usage with some attention to linguistic theory. Recommended for teachers at all levels. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. For English majors, these courses (limit of six credits) may be counted as part of graduate or undergraduate degree, but not both. Crosslisted as: LING 450.



**ENGL 451. History of the English Language. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. The historical development of the English language; etymology, morphology, orthography and semantics. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. Crosslisted as: LING 451.

**ENGL 452. Language and Gender. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of relationships between gender and language by focusing on such issues as differences between the ways women and men use language, relationships between language and power and ways in which language reflects and reinforces cultural attitudes toward gender. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. Crosslisted as: LING 452/GSW 452.

**ENGL 453. Modern Rhetoric. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 or HONR 200, and ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of a broad range of modern rhetorical theories, emphasizing their possible relationships with linguistics, literary criticism, civic engagement and the process of writing. Crosslisted as: LING 453.

**ENGL 454. Cross-cultural Communication. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of the dynamics of cross-cultural communication that applies linguistic tools to understanding cultural issues and solving communication problems. Crosslisted as: INTL 454/ANTH 450.

**ENGL 455. Language, Culture and Cognition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: three credits in a 200-level literature course (or equivalent). Introduces theoretical and methodological foundations for the study of language from sociocultural perspectives. The perspectives include linguistic, philosophical, psychological, sociological and anthropological contributions to the understanding of verbal and nonverbal communication as a social activity embedded in cultural contexts. No prior training in linguistics is presupposed. Crosslisted as: FRLG 448/ANTH 448/LING 455.

**ENGL 480. Authors: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. An advanced study of a specific author's texts and contexts. Taught in a seminar format with an emphasis on research.

**ENGL 481. Genres: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. An advanced study of a single genre, either over time or at a particular historical moment. Taught in a seminar format with an emphasis on research.

**ENGL 482. Literary Topics: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. An in-depth study of an aesthetic or cultural theme in literature. Taught in a seminar format with an emphasis on research.

**ENGL 483. Literary Texts and Contexts: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. An advanced study of a select group of literary texts with emphasis on the culture and historical moment in which they were produced. Taught in a seminar format with an emphasis on research.

**ENGL 484. Literary Movements: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. An advanced study of a group of writers whose work shares a common subject matter, writing style or philosophy. These may be defined by members of the movement (e.g., the Beats) or by critics in retrospect (e.g., the Metaphysical Poets). Taught in a seminar format with an emphasis on research.

**ENGL 485. Literary Theory and Criticism: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of six credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. An advanced study of a single theoretical and critical methodology, or a small cluster of them, as well as of their application to a variety of literary texts. Taught in a seminar format.

**ENGL 491. Topics in Writing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Maximum of 12 credits in all topics courses at the upper level. Prerequisites: UNIV 200 or HONR 200, and ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. Intensive study and practice of writing in a specific genre or application. See the Schedule of Classes for specific topics to be offered each semester.

**ENGL 492. Independent Study. 1-3 Hours.**

Semester course; variable hours. Variable credit. Maximum of 3 credits per semester. Student may take no more than 9 hours total. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. This course is designed for students who wish to do extensive reading and writing in a subject not duplicated by any English course in this bulletin.

**ENGL 493. English Internship. 1-3 Hours.**

Semester course; 1-3 credits. May be repeated for a maximum total of 6 credits. Prerequisite: three credits in a 200-level literature course (or equivalent). Open to students with demonstrated writing ability; completion of ENGL 302, 304 or 327 is recommended. Permission and determination of credit must be established prior to registration. Students will apply research, writing and/or editing skills in an approved job in areas such as business, government, law or financial services.

**ENGL 499. Senior Seminar in English. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 301 with a minimum grade of C. Restricted to seniors in English with at least 85 credit hours taken toward the degree. A study of a specific topic, author, movement or genre in a seminar format. Students will produce an extended, documented essay as a seminar paper. See the Schedule of Classes for specific topics to be offered each semester.

**European Cultures (EUCU)****EUCU 307. Aspects of German Culture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A broad interdisciplinary approach to an understanding of German culture, language and literature. Lectures in English by guest speakers and/or use of films as required. This course will not satisfy foreign language requirements. No knowledge of German is required. All work is done in English.

**EUCU 311. Classical Mythology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The basic myths of the Greek and Roman heritage. Their impact in culture then and now; from the origins of Greek myth to the superstitions of the late Roman and early Christian world.

**Foreign Languages (FRLG)****FRLG 100. Basic Language and Cultural Awareness Abroad: \_\_\_\_\_. 1 Hour.**

Semester course. 1 lecture hour. 1 credit. Introduces basic language skills and cultural customs and expectations to students of all disciplines planning foreign travel to a specific location. Students will learn useful vocabulary and phrases to apply in many different travel situations. Predominant focus will be placed on the culture of the specific region and include foundational communication skills. This course cannot be used to fulfill foreign language requirements for major, minor, collateral or General Education purposes. See Schedule of Classes for specific languages being taught each semester. Graded as pass/fail.

**FRLG 101. Foreign Languages: \_\_\_\_\_. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of FRLG 101 to enroll in FRLG 102. Elementary grammar, reading and oral skills. Course may be repeated with different languages.

**FRLG 102. Foreign Languages: \_\_\_\_\_. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of FRLG 101 to enroll in FRLG 102. Elementary grammar, reading and oral skills. Course may be repeated with different languages.

**FRLG 201. Foreign Languages: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FRLG 102. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading and writing skills. Course may be repeated with different languages.

**FRLG 202. Foreign Languages: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FRLG 201. Designed to increase the student's proficiency through the study of selected cultural and literary texts. Course may be repeated with different languages.

**FRLG 204. Language and Groups in the United States. 3,4 Hours.**

Semester course; 3-4 lecture hours. 3-4 credits. Taught in English. This course introduces students to the sociocultural experience and formation of identity of non-English-speaking peoples in the United States. Students explore the dynamic between English and a specific heritage language and its interaction with artistic, cultural and social issues through fiction and nonfiction texts, films and multimedia pertaining to specific language groups, such as: Latinos, Italian-Americans, German-Americans or Native Americans. See the Schedule of Classes for specific topics to be offered each semester. Crosslisted as: INTL 204.

**FRLG 328. Language, Culture, and Cognition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 220 or 230. Introduces theoretical and methodological foundations for the study of language from sociocultural perspectives. The perspectives include linguistic, philosophical, psychological, sociological and anthropological contributions to the understanding of verbal and nonverbal communication as a social activity embedded in cultural contexts. No prior training in linguistics is presupposed. Crosslisted as: ANTH 328/ENGL 328/LING 328.

**FRLG 345. Great Cities of the World. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Course may be repeated under different topics for a total of 6 credits. Prerequisite: sophomore standing or permission of instructor. An interdisciplinary course with a focus on the origin, expansion and significance of one or more cities, the specifics of its/their culture and the role of language. Particular emphasis will be placed on relating the physical, social and economic aspects of the city's growth and development to the cultural expression of urbanism. Crosslisted as: INTL 345/URSP 350.

**FRLG 448. Language, Culture and Cognition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: three credits in a 200-level literature course (or equivalent). Introduces theoretical and methodological foundations for the study of language from sociocultural perspectives. The perspectives include linguistic, philosophical, psychological, sociological and anthropological contributions to the understanding of verbal and nonverbal communication as a social activity embedded in cultural contexts. No prior training in linguistics is presupposed. Crosslisted as: ANTH 448/ENGL 455/LING 455.

**FRLG 493. World Languages Internship. 1-3 Hours.**

Semester course; variable hours. 1-3 credits (40 clock hours per credit). May be repeated for a maximum of 6 credits, however only 3 credits can count toward the major concentration. Prerequisites: prior completion of 9 credits in the respective foreign language at the 300 level, with a course in advanced grammar and composition, one in conversation and one in civilization. Designed for the advanced student to gain workplace experience in the target foreign language in internationally oriented public and private organizations and agencies. All course work must be completed in the target language.

**Foreign Literature in English Translation (FLET)****FLET 321. Early German Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Changing perspectives in German literature from its pagan beginnings, through the Medieval Golden Age, Baroque extremism, the Enlightenment and Storm and Stress up to Classicism and Goethe's Faust. Treatment of The Nibelungenlied, the courtly epic, Simplicissimus, and selections by Lessing, Schiller and Goethe. This course will not satisfy foreign language requirements. No knowledge of German is required. All work is done in English.

**FLET 322. Modern German Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Growing psychological awareness and alienation of the individual in German literature of the 19th and 20th centuries. Representative works chosen from among writers of the past century and such modern writers as Thomas Mann, Kafka, Hesse, Brecht, Kafka, Hesse, Brecht, Boll and Grass. This course will not satisfy foreign language requirements. No knowledge of German is required. All work is done in English.

**FLET 391. Topics in Foreign Literature in English Translation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of 12 credits. An in-depth study of selected topics in foreign literature. This course will not satisfy foreign language requirements. No knowledge of a foreign language is required. All work is done in English. Crosslisted as: INTL 391.

**FLET 492. Independent Study. 1-3 Hours.**

Semester course; 1, 2 or 3 credits. Maximum of 3 credits per semester, maximum total of 6 credits for all FLET independent study courses. Open generally to students of only junior or senior standing who have acquired at least 12 hours in any literature course. Determination of course content and permission of the instructor and department chair must be obtained prior to registration of the course. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest and for which they have the necessary background.

**Forensic Science (FRSC)****FRSC 202. Crime and Science. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduces the scientific theory, concepts and practices used in any physical science by relating them to the analysis of physical evidence performed in forensic laboratories and the fundamentals of crime scene investigation, and their relationship to the criminal justice system and criminal investigations. Not applicable for credit toward B.S. in Forensic Science.

**FRSC 300. Survey of Forensic Science. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL and BIOZ 151. Pre- or corequisites: CHEM and CHEZ 301, and UNIV 200 or HONR 200. Open only to forensic science majors or by permission of instructor. Introduces the theory, concepts and practices used in the analysis of physical evidence performed in crime laboratories, and the fundamentals of crime scene investigation. Also introduces ethical and quality assurance issues of crucial importance in modern crime laboratories.

**FRSC 309. Scientific Crime Scene Investigation. 3 Hours.**

Semester course; 3 lecture/laboratory hours. 3 credits. Prerequisites: CHEM 301 and either FRSC 300 or 350. Open only to forensic science majors or by permission of instructor. Provides scientific theory of crime scene investigation and crime scene reconstruction and basic knowledge of proper crime scene protocol and evidence processing techniques. Includes the processes for documentation, collecting and preserving physical evidence.

**FRSC 310. Forensic Anthropology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH 210. A comprehensive overview of forensic anthropology including its development and the theory and methodology on which it is based. Crosslisted as: ANTH 310.

**FRSC 325. Forensic Medicine. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FRSC 300, CHEM 301 and CHEZ 301. Open only to forensic science majors or by permission of instructor. An investigation of topics in death scene investigations as well as autopsy findings associated with natural and unnatural deaths.

**FRSC 365. Forensic Microscopy. 4 Hours.**

Semester course; 4 lecture/laboratory hours. 4 credits. Prerequisites: CHEM 301 and either FRSC 300 or 350. An in-depth course in the theory and practical application of microscopy to the examination, identification and individualization of physical evidence submitted to forensic laboratories.

**FRSC 375. Forensic Evidence, Law and Criminal Procedure. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Pre- or co-requisites: FRSC 300 or FRSC 350. Open only to forensic science majors or by permission of instructor. The law of criminal procedure and rules of evidence as applied to forensic science. Topics will include scientific versus legal burdens of proof, legal terminology and trial procedure.

**FRSC 385. Forensic Serology. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: CHEM 301 and either FRSC 300 or 350. Examines the application of basic chemical, biological, immunological and microscopic laboratory techniques to the examination and identification of body-fluid stains, including both presumptive and/or confirmatory identification of blood, semen, saliva, urine and feces. Applies methods that are used in forensic laboratories to identify the species of origin and includes a review of advanced methods for automated serological analysis. Laboratory exercises will supplement lectures to give students practical knowledge of the laboratory procedures.

**FRSC 391. Topics in Forensic Science. 1-3 Hours.**

Semester course; variable lecture hours. 1-3 credits. Maximum total of 6 credits for all forensic science topics courses may be applied to the major. Prerequisites: CHEM 301 and either FRSC 300 or 350. A study in selected topics in forensic science. See the Schedule of Classes for specific topics to be offered each semester and additional prerequisites.

**FRSC 400. Forensic Chemistry. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FRSC 300 or 350, CHEM 409 and CHEZ 409. Provides an understanding of presumptive and confirmatory chemical analyses used in a forensic laboratory for the characterization and identification of physical evidence, such as accelerants and explosives, paints and polymers, suspected drug substances, and toxicology. Chemical analyses as pertaining to firearms, toolmarks and glass will also be explored.

**FRSC 410. Forensic Pattern Evidence. 3 Hours.**

Semester course; 3 lecture/laboratory hours. 3 credits. Prerequisite: FRSC 309. Open only to forensic science majors or by permission of instructor. Covers topics in pattern evidence analysis including analysis of latent prints and impression evidence of footwear and tire treadmarks as applied to forensic casework. Covers both the theoretical and practical aspects using lectures and laboratory exercises focusing on the visualization, examination and interpretation of pattern evidence.

**FRSC 412. Forensic Analysis of Firearms and Toolmarks. 3 Hours.**

Semester course; 3 lecture/laboratory hours. 3 credits. Prerequisite: FRSC 365. Open only to forensic science majors or by permission of instructor. An investigation of topics in firearms and toolmark examination for forensic applications. The course covers both theoretical and practical aspects using lectures and laboratory exercises.

**FRSC 438. Forensic Molecular Biology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 310 or equivalent; CHEM 302 and CHEZ 302. Provides an understanding of molecular biology testing methodologies as applied to analysis of forensic samples. Current topics in forensic DNA analysis will include quality assurance, DNA databanking, contemporary research and population genetics. Crosslisted as: BIOL 438.

**FRSC 445. Forensic Toxicology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 301-302 and CHEZ 301. Provides a comprehensive overview of the basic principles of toxicology and the practical aspects of forensic toxicology. Students will learn to define the toxic agents most commonly resulting in legal problems in U.S. society and also the process by which the U.S. judicial system is aided by scientific investigation. Crosslisted as: PATH 445.

**FRSC 490. Professional Practices in Forensic Science. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 301, either FRSC 300 or 350, and one additional forensic science course. Restricted to seniors in forensic science with at least 85 credit hours toward the degree. An examination and evaluation of historical and current issues in the scientific analysis of physical evidence in criminal investigations. Individual and group activities relating to professional practices (ethics, quality control and testimony) of forensic scientists.

**FRSC 492. Forensic Science Independent Study. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for a maximum of 6 credits. Prerequisites: CHEM 301 and either FRSC 300 or 350. Open only to forensic science majors with junior or senior standing and a minimum GPA of 2.5. A determination of the amount of credit and the written permission of both the instructor and the program director must be procured prior to registration for the course.

**FRSC 493. Forensic Science Internship. 3 Hours.**

Semester course; 3 credits. May be taken only once. Prerequisites: 27 forensic science core program credits and at least a 2.75 GPA. Open only to forensic science majors with senior standing. An application is required in advance of admission with permission of the internship coordinator. Through placement in an approved organization, the student will obtain a broader, more practical knowledge of forensic science and its applications. Written progress and final reports are required. Graded as pass/fail.

**Forensic Science Lab (FRSZ)****FRSZ 101. GENERAL CHEMISTRY LABORATORY I. 1 Hour.****FRSZ 102. GENERAL CHEMISTRY LAB II. 1 Hour.****FRSZ 391. Topics in Forensic Science Laboratory. 1-3 Hours.**

Semester course; variable laboratory hours. 1-3 credits. Maximum total of 6 credits for all forensic science topics courses may be applied to the major. Prerequisite: FRSC 300 or 350. Laboratory investigations in a selected topic in forensic science. See the Schedule of Classes for specific topics to be offered each semester and additional prerequisites.

**FRSZ 400. Forensic Chemistry Laboratory. 2 Hours.**

Semester course; 4 laboratory hours. 2 credits. Pre- or corequisite: FRSC 400. Practical laboratory application with instrumentation used in a forensic laboratory for the chemical analysis of various types of physical evidence, including accelerants, explosives, paints, fibers, glass, suspected drug substances and other evidence.

**FRSZ 438. Forensic Molecular Biology Laboratory. 2 Hours.**

Semester course; 3 laboratory hours. 1 credits. Pre- or corequisite: BIOL/FRSC 438. Provides comprehensive coverage of the various types of DNA testing currently used in forensic science laboratories. Students will have hands-on experience with the analytical equipment employed in forensic science laboratories and the techniques for human identification in forensic casework. Students also will explore and practice both scientific writing and writing of DNA case reports. Crosslisted as: BIOZ 438.

**French (FREN)****FREN 101. Elementary French. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of FREN 101 to enroll in FREN 102. Elementary grammar, reading and oral drill.

**FREN 102. Elementary French. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of FREN 101 to enroll in FREN 102. Elementary grammar, reading and oral drill.

**FREN 110. Intensive French I. 8 Hours.**

Semester course; 10 lecture and laboratory hours. 8 credits. This intensive course combines FREN 101 and 102 into a single semester.

**FREN 201. Intermediate French. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 102. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading and writing skills.

**FREN 202. Intermediate French Readings. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 201. In order to complete French through the intermediate level, a student may select FREN 202 or 205. Designed to increase the student's proficiency through the study of selected cultural and literary texts.

**FREN 205. Intermediate Conversation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 201. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues and free conversation.

**FREN 210. Intensive French II. 6 Hours.**

Semester course; 6 lecture and laboratory hours per week. 6 credits. Prerequisites: FREN 101 and 102, or FREN 110. This intensive course combines FREN 201 and 202/205 into a single semester.

**FREN 295. Gateway to the French Major/Minor. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 201 or permission of instructor. Non-foreign language majors who wish to take one or two upper-level classes only need to complete FREN 202, 205 or equivalent. This course is composed of three different areas: 1) writing and analytical skills: enhancement of grammatical and writing skills and development of analytical techniques using a variety of texts; 2) improving students' oral communication; 3) listening skills: extensive use of recorded material and Language Learning Center resources to improve and enhance listening skills in a variety of authentic contexts.

**FREN 300. Advanced Grammar and Writing. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisites: for FREN 300: FREN 202 or 205; for 301, FREN 202, 205 or 300. Conducted in French. A systematic review of French grammar with emphasis on the elements of style and vocabulary building; translation and composition.

**FREN 301. Advanced Grammar and Writing. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisites: for FREN 300: FREN 202 or 205; for 301, FREN 202, 205 or 300. Conducted in French. A systematic review of French grammar with emphasis on the elements of style and vocabulary building; translation and composition.

**FREN 305. Advanced Conversation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 202 or 205. Conducted in French. Development of advanced oral skills while conversing about topics on current French culture and society. Proficiency in listening comprehension is stressed through regular activities based on a variety of different situations of communication.

**FREN 307. French Conversation and Film. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 202, 205 or 300. The course is designed to develop the student's conversational skills, oral comprehension ability and knowledge of contemporary culture through discussion of selected French films. Emphasis is also placed on vocabulary development and writing practice.



**FREN 320. French Civilization and Culture I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 202, 205 or 300. Conducted in French. A survey of French civilization and culture from its origins to the French Revolution. Introduction to and analysis of the most important aspects of Gallo-Roman society and of the Merovingian, Carolingian and Capetian dynasties which influenced the institutions of the Ancien Regime and still serve as cultural archetypes and icons in contemporary French culture.

**FREN 321. French Civilization and Culture II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 202, 205 or 300. Conducted in French. A survey of French civilization and culture from the Napoleonic era to the present. This course retraces important cultural and social traditions found during the first Empire, the Restoration, the Second Republic, the Second Empire, the Commune, the Third and Fourth Republics which influenced and continue to shape contemporary French civilization and culture of the Fifth Republic.

**FREN 330. Survey of Literature. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: FREN 202, 205 or 300. Conducted in French. First semester: through the 18th century. Second semester: 19th and 20th centuries.

**FREN 331. Survey of Literature. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: FREN 202, 205 or 300. Conducted in French. First semester: through the 18th century. Second semester: 19th and 20th centuries.

**FREN 410. Explication de Textes. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 320 or 321 or 330 or 331. Conducted in French. This course provides an introduction to terms encountered in text analysis: prosody, versification, rhetorical language, narratology and genres. It presents traditional and current schools of literary criticism and applies them to an interdisciplinary selection of texts. See the Schedule of Classes for the specific topic to be offered each semester.

**FREN 420. French Regional Culture. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 320 or 321. Conducted in French. Focuses on the culture and civilization specific to each of France's 22 regions. History, culture, architecture as well as sociopolitical, linguistic identities, artisanal trades and folklore are presented for each region. See the Schedule of Classes for the specific topic to be offered each semester.

**FREN 421. French Contemporary Culture. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 320 or 321. Conducted in French. Focuses on the contemporary culture found in French society. The individuals and events shaping current French social, political, artistic and cultural life are examined. Each theme is illustrated by current audiovisual materials. See the Schedule of Classes for the specific topic to be offered each semester.

**FREN 422. French Cinema. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 320 or 321. Conducted in French. Tracing French cinema from les Froes Lumiere and Georges Melius through the New Wave to new contemporary directors, this course focuses on the thematic selections and stylistic techniques particular to French cinematographic culture. The class is offered concurrently with the annual VCU French Film Festival, thereby permitting students to directly communicate with French actors and directors participating in the festival. See the Schedule of Classes for the specific topic to be offered each semester.

**FREN 425. French Media. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 320 or 321 or 330 or 331. Conducted in French. Analysis of the French media: written press, radio and television. Advanced comprehension skills required and stressed through regular exercises pertaining to different journalistic discourses and styles. Proficiency in journalistic writing is developed in class through the creation of an electronic French newspaper on the Internet. See the Schedule of Classes for the specific topic to be offered each semester.

**FREN 426. Pop France. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 321 or 331. Conducted in French. Explores contemporary French popular culture, put in a wider historical context. Discusses mainstream media, new media, commercial cinema, comic strips, pulp fiction and food, while devoting several weeks to music. Investigates the complex sociolinguistics of argot (slang), with a special interest in the banlieues' (suburbs) multicultural subculture and multifaceted codes. Also questions the possibility of a "pop philosophy" in French thought.

**FREN 430. Great Poets and Their Times. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 330 or 331. Conducted in French. Poetry of select major poets of a select century or centuries within a context of the historical, artistic and broad cultural setting of the poets' times. See the Schedule of Classes for the specific topic to be offered each semester.

**FREN 431. The 16th Century. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 330 or 331. Conducted in French. A contextualization and detailed study of a selection of works representative of literary schools, genres and major works of the period: Rabelais, the Pleiade, Minting and the Baroque poets. See the Schedule of Classes for the specific topic to be offered each semester.

**FREN 432. The 17th Century. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 330 or 331. Conducted in French. A contextualization and detailed study of a selection of texts representative of literary schools, genres and major works of the period: Baroque and Classical readings including prose, poetry and drama of the authors of the reign of Louis XIV; Pascal, La Rochefoucauld, La Bruyere, Corneille, Racine and Moliere. See the Schedule of Classes for the specific topic to be offered each semester.



**FREN 433. The 18th Century. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 330 or 331. Conducted in French. A contextualization and detailed study of a selection of texts representative of literary schools, genres and major works of the period: the "philosophes" including Montesquieu, Voltaire, Diderot and Rousseau and readings from Marivaux, Provost and Vauvenargues. See the Schedule of Classes for the specific topic to be offered each semester.

**FREN 434. The 19th Century. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 330 or 331. Conducted in French. A contextualization and detailed study of a selection of texts representative of literary schools, genres and major works of the period: Romanticism, Realism, Naturalism and Symbolism. See the Schedule of Classes for the specific topic to be offered each semester.

**FREN 435. Contemporary French Literature. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 330 or 331. Conducted in French. An overview of French literature from 1900 to the present. Discusses texts that have particular resonance in relation to contemporary issues, including literary works that have contributed most saliently to French culture over this time period.

**FREN 440. Commercial French. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 320 or 321 or 330 or 331. This course introduces students to the cultural, economic and linguistic dimensions of the Francophone commercial sector. It builds the student's reading, writing, listening and speaking proficiencies through active engagement with business-related materials and activities. See the Schedule of Classes for the specific topic to be offered each semester.

**FREN 450. Francophone Literatures and Cultures. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisite: FREN 301; FREN 305 or 307; FREN 320 or 321 or 330 or 331. Conducted in French. Introduces students to the literatures and cultures of the Francophone world. Provides an overview of the Francophone world and an in-depth study of literary works written in French from Africa, the Caribbean, North America, Asia and Europe. Also explores the impact of Colonial history on Francophone literatures and cultures. See the Schedule of Classes for the specific topic to be offered each semester. Crosslisted as: INTL 450.

**FREN 491. Topics in French. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated with different topics for a maximum of 9 credits. Prerequisites: FREN 301; FREN 305 or 307; FREN 320 or 321 or 330 or 331. An in-depth study of selected topics in French. See the Schedule of Classes for specific topics to be offered each semester.

**FREN 492. Independent Study. 1-3 Hours.**

Semester course; variable hours. Variable credit. Maximum of 3 credits per semester; maximum total of 6 credits for all independent study courses in French. Prerequisite: FREN 301; FREN 320 or 321; Senior standing with a minimum of 85 credits earned toward the degree. Determination of course content and permission of the instructor must be obtained prior to registration of the course. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest.

**Gender, Sexuality and Women's Studies (GSWS)****GSWS 201. Introduction to Gender, Sexuality and Women's Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An interdisciplinary and cross-cultural introduction to the perspectives and core concerns pertaining to gender, sexuality and women's studies.

**GSWS 206. African American Family Relationships. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Focuses on the African-American family from the 1940s to the present. Examines the values and the interpersonal/role relationships that are involved in forming and maintaining African-American families in the contemporary United States. Topics include dating and sexual relationships, marital relationships, parent-child relationships and relationships with members of the extended family. Crosslisted as: AFAM 206/SOCY 206.

**GSWS 236. Women in Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. An introduction to literature by and/or about women. Crosslisted as: ENGL 236.

**GSWS 291. Topics in Women's Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a total of 6 credits. An in-depth examination of specialized areas of interest in women's studies. See the Schedule of Classes for specific topics to be offered each semester.

**GSWS 301. Feminist Social Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Pre- or corequisite: UNIV 200 or HONR 200. This course examines the major theoretical traditions and thinkers of feminist theory from the works of early liberal feminists like Wollstonecraft to the present thought of postmodern and lesbian feminists like Wittig. It examines arguments about human nature, the origins and effects of patriarchy, the conflict between equality and gender difference and feminist critiques of traditional theories of knowledge.

**GSWS 304. Sociology of Families. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or ANTH 103/INTL 103. The family in its social and cultural context. Analysis of child rearing, marriage, kinship, family crises and family change in various societies around the world. Crosslisted as: ANTH 304/SOCY 304.

**GSWS 305. African American Family in Social Context. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A socio-historical examination of the development of the family system of Americans from Africa. Focuses on large-scale (macro level) processes such as changes in the major mode of economic production and in political systems and the corresponding changes in black family structure and functioning. Presents the theoretical material on African-American families and social change that prepares students for further study of the family as a social institution and for the study of family policy. This course is designed to meet the needs of upper-division social science majors. Crosslisted as: AFAM 305/SOCY 305.

**GSWS 309. Global Women's Health. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Explores issues in women's health from a national and international perspective with an emphasis on the experiences of women in the African diaspora. Theories in medical anthropology are employed to examine key themes. Crosslisted as: AFAM 309/ANTH 309/INTL 309.

**GSWS 316. Women and the Law. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduces students to the history, politics and status of women under the American legal system. Topics to be covered may include equal protection, sexual violence, the particular rights of women of color and lesbians, reproductive rights of women of color and lesbians, reproductive rights, women criminals and women in the legal profession. Crosslisted as: POLI 316.

**GSWS 318. Politics of Race, Class and Gender. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the racial, class and gender influences on the history and development of political values, conflicts, processes, structures and public policy in the United States. Crosslisted as: AFAM 318/POLI 318.

**GSWS 319. Women and American Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course analyzes the participation of women in American politics. Attention is given to both women's historical and contemporary roles in politics, their participation as voters and citizens, and their behavior as candidates and office holders. Additional topics may include workplace, family and education issues and reproductive rights. Crosslisted as: POLI 319.

**GSWS 333. Gender in Society. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of instructor. Explores different theoretical approaches to gender and its intersections with other sources of inequality, including sexuality, race, class and age. Possible topics include masculinities, gender and the body, and how gender operates in various institutional settings, such as the economy and the family. Crosslisted as: SOCY 333.

**GSWS 334. Sociology of Women. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or consent of instructor. This course will examine the position and status of women across societies and the social forces that maintain existing patterns and arrangements. The integration of family and work in women's lives will be emphasized. Crosslisted as: SOCY 334.

**GSWS 335. Psychology of Women. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Overview of issues in psychology relevant to women. Topics include: research methods of women's issues; sex-role socialization; women and hormones; psychological androgyny; personality theory and counseling strategies for women; women and language; women and violence; and rape and abuse. Crosslisted as: PSYC 335.

**GSWS 336. Violence Against Women. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or GSWS 201. An examination of violence against women from a global and local perspective with a primary focus on violence perpetrated against women in the U.S. Requires a minimum of 20 hours of community service. Crosslisted as: SOCY 336.

**GSWS 339. History of Women in Europe I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of European women from antiquity to the Enlightenment. A major focus will be primary sources by and about women. Crosslisted as: HIST 330.

**GSWS 340. History of Women in Europe II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of European women from the French Revolution to the present. A major focus will be primary sources by and about women. Crosslisted as: HIST 331.

**GSWS 341. American Women's History I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Students will analyze historical changes in the social, cultural, political and economic position of women in America from the colonial period through the 1848 Seneca Falls Convention. Methods include reading, lecture and discussion. Topics include differences and similarities of women's experiences across lines of class, race and ethnicity, the struggle for suffrage and social reform, shifting gender roles and changing employment opportunities. Crosslisted as: HIST 365.

**GSWS 352. Feminist Literary Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. The study of contemporary feminist thought and feminist approaches to analyzing literature and culture. This course examines the history and development of feminist theory as a methodology in the humanities, explores several of the major theoretical trends of the past 30 years and examines applications of feminist theory to specific works of literature. Crosslisted as: ENGL 352.

**GSWS 353. Women Writers. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once when a different group of writers is studied. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of selected literature written by women and about women writers. Crosslisted as: ENGL 353.

**GSWS 354. Lesbian Texts/Queer Theories. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of queer literature and theory, focusing on writing about female same-sex desire. Explores the idea of a "lesbian subject" and a "lesbian text" through directed study of literature, film, history and theory. Considers issues of aesthetics, politics, authorship and interpretive communities and examines the intersection of social identities with particular attention to race/ethnicity, sex/gender, class and nationality. Crosslisted as: ENGL 354.

**GSWS 355. Queer Cinema. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Theoretical focus on cinematic works about and/or by those identifying as lesbian, gay, bisexual, transgender or queer. Examines concepts of gender, sexuality and women's studies through analysis of selected works in the medium of film as well as engages with theoretical texts in the field.

**GSWS 356. Open Minds. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Experiential seminar held at a local correctional institution that connects students to inmates as learning partners. Examines the history and development of American prisons in context, supplementing theoretical studies with the lived experiences of inmates.

**GSWS 366. Women and Global Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of women and global politics, providing both a feminist re-examination of traditional international-relations theories and a comparative analysis of the political, legal and economic status of the world's women. The impact of women on global political institutions such as the United Nations will be addressed as well as other feminist and grass roots means of taking political action. Crosslisted as: POLI 366/INTL 368.

**GSWS 371. Women in Islam. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200, RELS 108, GSWS 201 or ENGL 215. Critical study of the roles and rights of women in Islam. Crosslisted as: RELS 371.

**GSWS 372. Global Women's Spirituality. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Explores the spiritual writings of women in various cultures and religious traditions. Crosslisted as: RELS 372/INTL 372.

**GSWS 373. Gender and the Bible. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 108 or GSWS 201 or RELS 301 or RELS 302; and ENGL 215 or UNIV 200 or HONR 200. Studies the Hebrew and Christian scriptures with emphasis on gender. Attention to traditional, feminist, womanist and postcolonial interpretation. Crosslisted as: RELS 373.

**GSWS 380. Lesbian and Bisexual Women. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course examines the lives of contemporary lesbian and bisexual women from psychological, sociological, developmental, political and cultural perspectives. The intersection of race, class, ethnicity, religion, age, disability and locale with lesbian/bisexual identity will be explored.

**GSWS 382. Gender, Crime and Justice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181 or permission of instructor. Examines the role of gender as it relates to crime and justice. Special attention will focus on the gendered experiences of practitioners, offenders and victims within the criminal justice system in terms of processing, adjudication and institutional responses. Crosslisted as: CRJS 382.

**GSWS 390. Africa and the Americas: Slavery, Gender and Race. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines various aspects of slavery in Africa and selected parts of the African diaspora, including the United States, Canada and the Caribbean, with special emphasis on the role played by race and gender. Topics will include African conditions of servility, the trans-Atlantic trade in enslaved Africans, and chattel slavery, demography, labor, law, discipline, abuse, resistance and status. Crosslisted as: AFAM 390/HIST 380.

**GSWS 391. Topics in Gender, Sexuality and Women's Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of 12 credits. An in-depth examination of specialized areas of interest in gender, sexuality and women's studies. See the Schedule of Classes for specific topics to be offered each semester.

**GSWS 392. Women's Health Care Across the Life Span. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is intended for upper-level undergraduate students. Introduces students to the health issues that affect women throughout the life span. The impact of physiological, psychological, cultural and political factors upon women's well-being will be addressed.

**GSWS 393. Feminist Research and Methods. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Completion of STAT 210 (or equivalent) is strongly recommended. Explores the implications of feminist theorizing across disciplinary and cultural contexts for both methodology and epistemology. Examines how knowledge and power intersect, how gender theory and feminist politics influence research, how the knower influences knowledge production and how social location shapes inquiry.

**GSWS 401. Topical Senior Seminar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: 21 credits in gender, sexuality and women's studies or permission of the instructor. Students are required to produce a senior research project on a topic related to the theme of the seminar.

**GSWS 414. Psychology of Women's Health. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Overviews the psychological research on women's health. Topics include health behavior change, personality and individual differences, cognitive factors, disease-specific behaviors and interventions. Crosslisted as: PSYC 414.

**GSWS 450. Black Feminist Thought. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Theoretical focus on black feminist thought, spanning the first wave of feminism in the U.S. from the late-19th and early 20th century onward. Though primarily U.S.-focused, this course examines black feminist thought globally, as well as that of lesbians, transgendered or queer individuals, foregrounding topics such as race, gender, class, sexuality, activism, liberation, labor and social movements. Also examines the history and development of black feminist thought, considers it as a methodology in the humanities and social sciences, explores several of its major theoretical trends of the past 100 years and examines its applications to cultural phenomena and current events.

**GSWS 452. Language and Gender. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of relationships between gender and language by focusing on such issues as differences between the ways women and men use language, relationships between language and power and ways in which language reflects and reinforces cultural attitudes toward gender. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. Crosslisted as: ENGL 452/LING 452.

**GSWS 453. Western Religions, Women and Social Justice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 or HONR 200; and RELS 108, GSWS 201 or WRLD 210. Explores the experience and portrayal of women in the three Abrahamic traditions: Judaism, Islam and Christianity. Study focuses on how these religions and their texts bear upon the social, economic, political and spiritual lives of women. Special attention is given to the impact of globalization and religious fundamentalism on women. Crosslisted as: INTL 453/RELS 453.

**GSWS 457. Women, Art and Society. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103, ARTH 104 and UNIV 200 or HONR 200. Open to School of the Arts majors only. A re-examination of a variety of issues concerning women, art and society: the position assigned women within the history of art as it relates to historical place and the aesthetic values of the canon, the gendering of style, patronage, audience and gaze. Through a survey of images of and by women, as well as through an analysis of art historical and critical texts, this course addresses the question: "How are the processes of sexual differentiation played out across the representations of art and art history?" Crosslisted as: ARTH 357.

**GSWS 491. Topics in Women's Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a total of 12 credits. An in-depth examination of specialized areas of interest in women's studies. See the Schedule of Classes for specific topics to be offered each semester.

**GSWS 492. Independent Study. 1-4 Hours.**

Semester course; variable hours. Variable credit. Maximum of 4 credits per semester; maximum total of 4 credits in all independent study courses. Open generally to students of only junior and senior standing who have acquired at least 12 credits in women's studies courses. Determination of the amount of credit and permission of the instructor and coordinator must be obtained prior to registration for the course.

**GSWS 493. Internship. 1-3 Hours.**

Semester course; variable hours. 1, 2 or 3 credits. May be repeated for a maximum total of 6 credits. Prerequisites: internship credit is limited to students with a minimum grade point average of 3.0 and junior or senior status. Directed internship, local or abroad, or other approved study-abroad experience with the objective to provide real-life experience. Determination of the amount of credit (based on hours or effort required) and permission of departmental internship coordinator must be obtained prior to registration for the course. Graded pass/fail.

**German (GRMN)****GRMN 101. Elementary German I. 4 Hours.**

Semester course; 5 lecture/recitation hours. 4 credits. For students with no prior knowledge of German. Elementary grammar, reading and oral skills.

**GRMN 102. Elementary German. 4 Hours.**

II Semester course; 5 lecture/recitation hours. 4-4 credits. Prerequisite: GRMN 101 Elementary grammar, reading and oral skills.

**GRMN 201. Intermediate German. 3 Hours.**

I Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 102. Conducted in German. Continuation of the essentials of grammar with emphasis on building proficiency in aural comprehension, speaking, reading and writing skills.

**GRMN 202. Intermediate German II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 201. Conducted in German. Designed to increase student's proficiency in German through the continued focus on aural comprehension, speaking, reading and writing skills.

**GRMN 205. Intermediate Conversation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 201. Conducted in German. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues and free conversation.

**GRMN 300. Composition and Communication. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 202 or 205. Conducted in German. Development of written and oral skills through review of selected aspects of German grammar, writing practice and speaking activities based on a variety of situations.

**GRMN 301. Grammar and Writing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 202, GRMN 205 or GRMN 300. Conducted in German. A study of key aspects of advanced German grammar with emphasis on the elements of style and vocabulary building.

**GRMN 305. German Conversation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 202, GRMN 205 or GRMN 300. Conducted in German. Practice in the spoken language with emphasis on discussions relating to topics of current interest.

**GRMN 307. German Conversation and Film. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 202, GRMN 205 or GRMN 300; GRMN 300 recommended. Conducted in German. The course is designed to develop the student's communication skills, oral comprehension ability and knowledge of contemporary culture through discussion of selected German films. Emphasis is also placed on vocabulary development and writing practice.

**GRMN 311. German Through the Media. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 202, GRMN 205 or GRMN 300; GRMN 300 or GRMN 301 recommended. Designed to develop language proficiency by using material available through the various media: newspapers, magazines, films, Internet, podcasts and radio broadcasts.

**GRMN 314. Commercial German. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 301. Designed to develop the student's ability to use German as a means of oral and written communication in the business world. Emphasis on the acquisition of technical tools necessary for business exchanges in specialized fields.

**GRMN 320. From the Vandals to Kant: Civilization and Literature I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 202, GRMN 205 or GRMN 300; GRMN 300 or GRMN 301 recommended. Conducted in German. A survey of German-speaking culture and literature from its origins to the Enlightenment. Also emphasizes enhancing German-language skills in vocabulary, reading, speaking and writing.

**GRMN 321. From Faust to Nazism: Civilization and Literature II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: GRMN 202, GRMN 205 or GRMN 300; GRMN 300 or GRMN 301 recommended. Conducted in German. A treatment of German culture and literature from the Age of Goethe to the rise of Nazism. Also emphasizes enhancing German language skills in vocabulary, reading, speaking and writing.

**GRMN 322. From Kafka's World to the EU: Civilization and Literature III. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: GRMN 202, GRMN 205 or GRMN 300; GRMN 300 or GRMN 301 recommended. Conducted in German. A survey of German culture and literature from the 1920s to today. Also emphasizes enhancing German language skills in vocabulary, reading, speaking and writing.

**GRMN 420. The Turn of the Century. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: GRMN 300; GRMN 305 or 307 or 311; GRMN 301 or 320 or 321 or 322. Conducted in German. A course dealing with the major intellectual, philosophical, artistic and cultural trends from the turn of the century through the Weimar period as reflected in the writings of authors such as Kafka, Mann and Hesse. Includes impressionism, expressionism and neue Sachlichkeit.

**GRMN 421. The Postwar German Scene. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: GRMN 300; GRMN 305 or 307 or 311; GRMN 301 or 320 or 321 or 322. Conducted in German. A course dealing with the political, social and intellectual developments of the German-speaking countries from the end of World War II to the present as reflected in the literary works of their major authors.

**GRMN 422. German Film. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a total of 6 credits. Prerequisites: GRMN 300; GRMN 305 or 307 or 311; GRMN 301 or 320 or 321 or 322. Study of selected topics in German film from the beginnings to today, particularly as seen in their social, historical and cultural contexts. See the Schedule of Classes for the specific topic to be offered each semester.



**GRMN 423. Folk/Popular Culture. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a total of 6 credits. Prerequisites: GRMN 300; GRMN 305 or 307 or 311; GRMN 301 or 320 or 321 or 322. Study of selected topics related to folk traditions and/or popular culture in German-speaking countries. See the Schedule of Classes for the specific topic to be offered each semester.

**GRMN 424. Culture and Society. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a total of 6 credits. Prerequisites: GRMN 300; GRMN 305 or 307 or 311; GRMN 301 or 320 or 321 or 322. Study of issues in the culture and society of German-speaking countries today. See the Schedule of Classes for the specific topic to be offered each semester.

**GRMN 425. Language in Context: \_\_\_\_\_. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: GRMN 300; GRMN 301, 305, 307 or 311; and GRMN 320, 321 or 322. Conducted in German. Study of German language and linguistics. See the Schedule of Classes for the specific topic to be offered each semester.

**GRMN 491. Topics in German. 1-3 Hours.**

Variable hours. 1-3 credits. May be repeated with different topics for a maximum of 9 credits. Prerequisites: GRMN 300; GRMN 305 or 307 or 311; GRMN 301 or 320 or 321 or 322. An in-depth study of selected topics in German. See the Schedule of Classes for specific topics to be offered each semester.

**GRMN 492. Independent Study. 1-3 Hours.**

Semester course; variable hours. Variable credit. Maximum of 3 credits per semester; maximum total of 6 credits for all independent study courses in German. Prerequisites: GRMN 301; GRMN 320 or 321 or 322; GRMN 420 or 421 or 422 or 423 or 424 or 491; and senior standing with a minimum of 85 credits earned toward the degree. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest.

**Health, Physical Education and Exercise Science (HPEX)****HPEX 107. Badminton. 1 Hour.**

1 credit.

**HPEX 121. Self Defense: Karate or Judo. 1 Hour.**

1 credit.

**HPEX 201. Individual Sports and Lifelong Leisure Activities. 3 Hours.**

Semester course; 3 lecture/laboratory hours. 3 credits. Health, physical education and exercise science majors only. Prepares students to develop educational skills and methodology for instruction of individual sports in the classroom, gymnasium and outdoor field settings; students acquire skills needed to teach individual sports in middle and high school environments.

**HPEX 202. Team Sports and Activities. 3 Hours.**

Semester course; 3 lecture/laboratory hours. 3 credits. Open only to general health and physical education majors in the health, physical education and exercise science program. Students develop educational skills and methodology for instruction of team sports and group activities in classroom, gymnasium and outdoor field settings. Students acquire skills needed to teach team sports and activities in middle and high school environments.

**HPEX 203. Wilderness Education I. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Designed to examine the principal philosophical foundations of adventure theory and wilderness leadership. Concepts of judgment, decision-making, leadership and environmentally correct practices are introduced.

**HPEX 211. Tumbling and Elementary Rhythmics. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prepares students to work with elementary children 4 to 12 years of age in rhythmic activities; includes elementary tumbling, activities and games designed to help a child's rhythmic ability.

**HPEX 214. TEACHING SOCIAL RHYTHMICS. 1 Hour.****HPEX 216. Lifeguard Training. 1,2 Hour.**

1-2 credits.

**HPEX 217. Water Safety Instruction. 1,2 Hour.**

1-2 credits.

**HPEX 218. Scuba. 1 Hour.**

1 credit.

**HPEX 220. Introduction to Athletic Training. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 205 and BIOZ 205L. Corequisite: HPEZ 220L. An introduction to the field of athletic training. Includes the prevention and basic care of athletic injuries in the physically active.

**HPEX 230. History and Philosophy of Health and Physical Education. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An overview of the professional aspects of health and physical education. Historical and philosophical concepts, evaluation and research methods, current issues and trends, and career opportunities are discussed. Field experiences allow exposure to various professionals and facilities related to the health and physical education domains.

**HPEX 231. Principles of Accident Prevention. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is designed to provide information on the magnitude of the accident problem in the nation. Special attention is given to concepts and theories of accident prevention, particularly as they relate to use of highways.

**HPEX 232. Introduction to Driver Education. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A current automobile operator's permit is required. An introduction to the vehicle operator's task within the highway transportation system: driver task analysis.

**HPEX 250. Medical Terminology. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Self-directed learning experience for students entering a medical or allied health profession. Presents medical terms by their root word, suffix and prefix. Develops skills to build and decode medical terms by their word parts. Develops ability to recognize and use common medical abbreviations.

**HPEX 271. Safety, First Aid and CPR. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course includes American Red Cross and/or American Heart Association certification in Multimedia Standard First Aid and Basic Life Support (cardiopulmonary resuscitation). In addition, basic principles of accident causation and prevention are presented.



**HPEX 291. Special Topic in Health, Physical Education and Exercise Science. 1-3 Hours.**

Semester course; 1-3 credits. May be repeated for a maximum of 3 credits. Restricted to health, physical education and exercise science majors only. Offers students the opportunity to participate in an approved professional experience related to the students' knowledge base of general education and professional introduction courses; may include participatory and experimental formats dictated by the faculty supervisor; credits determined by the number of contact hours of the experience.

**HPEX 292. Independent Study in Health, Physical Education and Exercise Science. 1-3 Hours.**

Semester course; 1-3 credits. Health, physical education and exercise science majors only. May be repeated up to a maximum of 3 credits. Enables a student to create an individualized research project or professional experience based on specific professional needs and goals; must have adviser's approval; experiences based on the student's knowledge base of general education and professional core introduction courses; credits determined by the number of contact hours and extensiveness of the project.

**HPEX 293. Field Practicum I. 3-6 Hours.**

Semester course; variable practicum hours. 3-6 credits. Health, physical education and exercise science majors only. Provides observational and small group experiences for the pre-professional student; includes planned observations, tutorials and small group involvement under the supervision of the faculty and field supervisor; summary papers, observational logs, resumes and updated five-year plans are completed in this writing intensive course; minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

**HPEX 294. Field Practicum II. 3-6 Hours.**

Semester course; variable practicum hours. 3-6 credits. Health, physical education and exercise science majors only. Provides observational and small group experiences for the pre-professional student; includes planned observations, tutorials and small group involvement under the supervision of the faculty and field supervisor; minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

**HPEX 295. Clinical Practicum I. 3-6 Hours.**

Semester course; variable practicum hours. 3-6 credits. Health, physical education and exercise science majors only. Provides observational and small group experiences for the pre-professional student; includes planned observations, tutorials and small group involvement under the supervision of the faculty and clinical supervisor; summary papers, observational logs, resumes and updated five-year plans are completed in this writing intensive course; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

**HPEX 296. Clinical Practicum II. 3-6 Hours.**

Semester course; variable practicum hours. 3-6 credits. Health, physical education and exercise science majors only. Provides observational and small group experiences for the pre-professional student; includes planned observations, tutorials and small group involvement under the supervision of the faculty and clinical supervisor; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

**HPEX 300. Health Care Delivery in the U.S.. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduces students to the American health care system and provides an opportunity to analyze the diverse components comprising the system. Major components of the system are examined, including inpatient and outpatient services, financing, insurance and technology. Provides the student a perspective of the variety of career choices in health care.

**HPEX 310. Fitness and Health. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment restricted to HPEX majors. Presents the knowledge and pedagogical principles of strength, flexibility, aerobic and anaerobic training programs, as well as the role that exercise and lifestyle play on overall health. Emphasis is on understanding, experiencing and applying conditioning principles for individuals and how they impact health.

**HPEX 325. Pathology and Pharmacology in Athletic Training. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 220, HPEZ 220L, PHIS 206 and PHIZ/BIOZ 206L. Acquaints the student with the pathology of athletic injuries and the proper use of pharmacology in the treatment of athletic injuries. Includes the pathomechanics of sports injuries and the use of medication in the treatment of sports injuries.

**HPEX 330. Elementary Health and Physical Education. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 230, and either HPEX 201 or HPEX 202. Open only to general health and physical education majors in the health, physical education and exercise science program. Emphasis is given to the role of movement and theory in the education program and its implications for curriculum development and learning. Major consideration is given to the development of movement competency through thematic instruction.

**HPEX 331. Methods in Driver Education. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: HPEX 232. This course is designed to provide driver education instructional principles and methodology.

**HPEX 332. Motor Learning and Performance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is designed to introduce the student to the major concepts of motor control and motor learning and the influencing conditions. It will provide a framework for understanding the structure and function of the nervous system in relation to perception and motor control. Other topics include the general nature of skill acquisition and how learners interact with the environment while performing motor tasks. The theoretical framework underlying learning and memory are related to the acquisition of motor skills.

**HPEX 333. Psychosocial Aspects of Sport and Physical Activity. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The focus of this course is the scientific study of the behavior of individuals and groups within sport and physical activity in terms of the psychological effects and factors of sport participation, and in terms of the social relationships and social settings within which sport participation occurs.

**HPEX 334. Measurement and Analysis in Teaching and Exercise Science. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Corequisite: HPEZ 334. Topics include selecting, administering, scoring and evaluating tests in the areas of general motor performance, health screening, fitness, sport skills and knowledge. Includes scientific test construction and basic statistical analysis.

**HPEX 335. Elementary Physical Education for Physical Education Majors. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Designed to enhance knowledge of elementary physical education through an analysis of the aims, goals, objectives, programs and teaching methods. Construction of year-round curriculum and daily lesson plans. Emphasis also placed upon the acquisition of administrative and organizational knowledge dealing with facilities, equipment, teaching aids, testing, measurement and safety.

**HPEX 337. Technology in Teaching Health and Physical Education. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Emphasis is placed on the application of the latest software and hardware technology used in the field of health and physical education. Students use public school settings and authentic data whenever possible.

**HPEX 345. Nutrition for Health and Disease. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment restricted to HPEX majors. Overview of basic nutritional knowledge for both healthy individuals and those with increased risk of cardiovascular disease. The course relies on evidence-based research when discussing food and nutrition. Topics include science and politics of dietary guidelines; the science and controversies of carbohydrates, proteins, fats, vitamins and minerals; supplements; obesity and weight loss; digestion and absorption; allergies and intolerances; functional foods, phytochemicals and organic food.

**HPEX 350. Nutrition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Provides learning opportunities that enable the student to acquire a practical and useful knowledge based on the sound principles of applied human nutrition. Emphasis will be on nutritional needs through the cycles of life providing information that will enhance the student's own lifestyle and provide experience in interpreting nutritional information for the public.

**HPEX 351. Issues in Sexuality. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An overview of content, principles and strategies relating to issues in human sexuality both in the community and school settings. Basic concepts of human sexuality as they develop in today's world are presented. Issues include sexual maturity, reproductive systems, conception, birth, abortion and varieties of sexual behavior and sexual dysfunctions and disorders.

**HPEX 352. Substance Abuse. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of drugs that are used and abused in contemporary society. Multidisciplinary lectures and discussions include the historical and sociological perspectives of drugs in the school and community; the psychological and physiological effects of drug use; and the role of local and regional resources. Designed for students, teachers, counselors, administrators and other interested persons. Rehabilitation methods and prevention programs also will be discussed.

**HPEX 353. Disease Trends, Prevention and Control. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Pre- or corequisite: HPEX 250. Provides students an opportunity to examine the major categories of diseases, infectious and noninfectious, including significant examples in each category. Students will also research major diseases affecting the U.S. population as well as global populations. Current modalities for the prevention, treatment and control of these diseases will be studied.

**HPEX 354. Coping and Adaptation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Focuses on common stress factors in life such as death, personal loss, life changes, divorce and emotional problems, such as anger, loneliness and frustration. Strategies for dealing with such stressors are discussed and applied to both personal and professional settings.

**HPEX 355. School and Community Health Resources. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Acquaints the student with current available school and community resources and educational materials for health information. Available services in a community health program will be surveyed.

**HPEX 356. Community Health Education and Promotion: Theory and Practice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 300 and 353. Pre- or corequisite: HPEX 355. Introduces theories, roles and skills that are the foundation for the professional practice of community health education. Emphasizes the growing significance of health education in preventing and/or treating health problems, health promotion and improving quality of life. Presents the historical evolution and development of the profession and the various settings in which health educators practice. Assists in the preparation of students for certification as health education specialists.

**HPEX 357. Personal Health and Behavior Change. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Designed to provide students with a basic understanding of various contemporary personal and community health issues. Special emphasis placed on increasing awareness of multiple factors that affect individual health-behavior change and, subsequently, influence current and future health status.

**HPEX 358. Introduction to Epidemiology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: STAT 210. Enrollment restricted to HPEX majors. Introduction of students to the field of public health epidemiology, emphasizing methods for assessing factors associated with the distribution and etiology of health and disease. Skills include methods for identifying and evaluating sources of health information, calculation of key epidemiologic measures, epidemiological investigation techniques, and evaluation of the strengths and weaknesses of different study designs.

**HPEX 370. Coaching Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. A lecture/discussion course that identifies the practical administrative and organizational responsibilities coaches encounter. Realistic problem-solving is stressed.

**HPEX 371. Psychology of Physical Activity. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines psychological issues related to physical activity, exercise and sport participation. Topics include individual and group motivation theory and techniques, leadership effectiveness, mental health, mental skills training, injury rehabilitation, eating disorders, exercise adherence, addiction, overtraining and use of ergogenic aids. Emphasizes examination of current research and application of psychological principles in a physical activity setting.

**HPEX 372. Survey of Kinesiology and Physiology of Exercise. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines the basic concepts of human biomechanics and exercise physiology. Includes basic and applied kinesiology and metabolic, endocrinological, cardiovascular and respiratory responses and adaptations to exercise. Emphasizes the integration of kinesiological and physiological principles.

**HPEX 373. Structural Kinesiology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 205. Corequisite: HPEZ 373. Presents the anatomical aspects of human motion with particular attention given to application of anatomical structure and terminology in analysis of physical activities; emphasizes structure and function of the human musculoskeletal system and qualitative analysis of motor skills.

**HPEX 374. Musculoskeletal Structure and Movement. 4 Hours.**

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: BIOL 205. Pre- or corequisite: PHYS 201. Enrollment restricted to HPEX majors. Provides an understanding of the mechanical aspects of human motion with particular attention given to application of anatomical structure, terminology and biomechanics in the analysis of physical activity. Laboratory learning allows students to acquire practical knowledge and skills in palpation, biomechanical analysis and instrumentation.

**HPEX 375. Physiology of Exercise. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHIS 206. Corequisite: HPEZ 375. Physiological changes in the human organism resulting from exercise, investigation of recent research in diet, drugs, fatigue, cardiovascular/respiratory fitness, conditioning programs for various age groups and the effects of exercise upon various components of physical fitness and health. Application of specific problems to physical education programs. Laboratory experience in the use of research instruments.

**HPEX 380. Resistance Training for Health and Performance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 310 and HPEX 375. Enrollment restricted to HPEX majors. Provides students with the knowledge, skills and abilities to design and implement resistance training programs for a variety of populations. Covers the scientific and practical basis for resistance training to reduce injuries, improve health and optimize performance. Students actively participate in and demonstrate knowledge of a range of resistance exercise techniques, as well as preparticipation screening. Helps prepare those students wishing to attempt the National Strength and Conditioning Association's Certified Strength and Conditioning exam.

**HPEX 391. Special Topic in Health, Physical Education and Exercise Science. 1-3 Hours.**

Semester course; 1-3 credits. Health, physical education and exercise science majors only. May be repeated up to a maximum of three credits. Offers students the opportunity to participate in an approved professional experience related to the students' knowledge base of general education, professional introduction and some core professional courses; may include participatory experiences in which the student plays an active role in the experience; credits determined by the number of contact hours of the experience.

**HPEX 392. Independent Study in Health, Physical Education and Exercise Science. 1-3 Hours.**

Semester course; 1-3 credits. Health, physical education and exercise science majors only. May be repeated up to a maximum of 3 credits. Enables a student to create an individualized research project or professional experience based on specific professional needs and goals; must have adviser's approval; experiences based on the student's knowledge base of general education and professional introduction and some professional core courses; credits determined by the number of contact hours and extensiveness of the project.

**HPEX 393. Field Experience I. 3-6 Hours.**

Semester course; variable hours. 3-6 credits. Prerequisites: permission of instructor; acceptance into teacher preparation program; and CPR certification. Health, physical education and exercise science majors only. Precedes the in-depth student teaching experience or the in-depth exercise science field experience; includes planned observations, tutorials, small group involvement under the supervision of the faculty and field supervisor; practices routine, basic and advanced procedures; minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

**HPEX 394. Field Experience II. 3-6 Hours.**

Semester course; variable hours. 3-6 credits. Health, physical education and exercise science majors only. Designed to provide supervised practical experience in the teaching process or delivery of health education/health promotion programs; opportunities to further abilities in physical education and exercise science through practical application of skills in school or agency settings; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements.

**HPEX 395. Clinical Experience I. 3 Hours.**

Semester course; 3 clinical hours. 3 credits. Prerequisites for students in the exercise science concentration: HPEX 375, junior standing and permission of instructor. Prerequisites for students in the health sciences concentration: HPEX 250, HPEX 300, HPEX 353 and BIOL 205, junior standing, and permission of instructor. Enrollment restricted to HPEX majors. Students are also expected to maintain current CPR/AED/FA certification throughout the semester. Students should consult with an adviser or course instructor to obtain concentration-specific course prerequisites and course requirements. Addresses competencies in exercise science, health promotion and/or health science. Provides experiences at an approved affiliate site under the supervision of faculty and approved site supervisors. Students gain practical experience in routine and basic procedures associated with exercise science, health promotion and/or health science. A minimum of 40 contact hours per credit hour required.

**HPEX 396. Clinical Experience II. 3-6 Hours.**

Semester course; variable clinical hours. 3-6 credits. Health, physical education and exercise science majors only. Addresses required competencies in the athletic training, kinesiotherapy or community wellness education programs; provides experiences in an approved affiliate site under the supervision of faculty and approved clinical instructors; gains practical experience in routine, basic and advanced procedures associated with athletic training, kinesiotherapy or community wellness; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain specific course requirements and clinical competencies addressed.

**HPEX 420. Athletic Training Administration. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 395 and HPEX 396. Acquaints the student with the proper organization and management techniques used in health care administration of athletic training programs. Includes organization, management and administration of health care of the physically active in the athletic setting.

**HPEX 430. The Organization, Administration and Supervision of the Intramural Sports Program. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Experiences in the organization and administration of an intramural sports program. Lecture will be devoted to the theory, philosophy, history and plans for the conduct of an intramural sports program. Laboratory experience will be obtained by working in intramural programs.

**HPEX 431. Adapted Physical Activity. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prepares future teachers and professionals to meet the needs of persons with disabilities in organized health, physical education and rehabilitation programs in the school, community or hospital setting. Provides an overview of those disabilities found most frequently in public school and rehabilitation settings.

**HPEX 432. Methods and Curriculum in Physical Education. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prepares students to become independent problem-solvers and decision-makers by applying previously acquired knowledge to curriculum design and instruction in multiple settings; students acquire pedagogical skills and gain insight into the development of a physical education curriculum for elementary, middle and high school levels.

**HPEX 433. Methods and Curriculum in Health Education. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prepares students to become independent problem-solvers and decision-makers by applying previously acquired knowledge to curriculum design and instruction in a classroom setting; students acquire pedagogical skills and gain insight into the development of a health education curriculum for elementary, middle and high school levels.

**HPEX 435. Health Disparities in the U.S.. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 353 and HPEX 358. Enrollment restricted to HPEX majors. Provides an exploration into the magnitude of health disparities in the U.S. and the association with socioeconomic status, race, ethnicity, country of origin, cultural history and access to health services. Students are encouraged to broaden their perspectives and understand how various sociocultural factors impact health and health care delivery as it relates to the patient/consumer as well as the health care practitioner. Targets the values, beliefs, attitudes and customs of multiple segments of the population in relationship to age, gender, disability status, sexual orientation, area of residence, etc. Emphasizes and provides learning experiences to assist in the development of cultural competence.

**HPEX 440. Chronic Disease and Exercise Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: HPEX 375 and HPEZ 375L. Presents in-depth information of various concepts specifically related to exercise management of persons with chronic disease and/or disability. Provides scientific knowledge of various chronic diseases and disabilities that are commonplace and can be managed with physical activity. General topics include cardiovascular and pulmonary diseases, metabolic diseases, immunological and hematological diseases, orthopaedic diseases and disabilities, neuromuscular disorders, and cognitive, emotional and sensory disorders. Focuses on the understanding of specific physical and physiological characteristics associated with the various diseases and disabilities.

**HPEX 441. Assessment and Exercise Intervention in Health and Disease. 3 Hours.**

Semester course; 2 lecture and 1 laboratory hours. 3 credits. Prerequisite: HPEX and HPEZ 375. Provides in-depth information of various concepts specifically related to exercise assessment and prescription for healthy persons and those with chronic disease and/or disability. Examines the various concepts specifically related to measurement of cardiorespiratory fitness, pulmonary function, body composition, flexibility and muscular strength and endurance. Focuses on the development of exercise and physical activity prescriptions for healthy and diseased populations.

**HPEX 445. Principles of Health Care Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: HPEX 240 or 300. Exposes the student to basic aspects of administration and management in various health care settings. The traditional areas of administration and management, such as planning, organizing, staffing, directing and controlling will be addressed. Contemporary issues such as cultural competence, quality of care, ethics, and fraud and abuse will be examined. The course will provide a theoretical base that will enhance and facilitate the student's application of sound management principles in various practice settings.

**HPEX 450. Program Planning and Evaluation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: HPEX 356. Corequisite: HPEZ 450. Presents the foundations of planning, implementation and evaluation of community health education programs. Exposes students to programming and evaluation in a variety of community health settings, including schools, work sites, hospitals, state and local health departments and nonprofit agencies.

**HPEX 451. Professional Conference in Community Health Education. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Offers the student an opportunity to participate in a professional conference focusing on community health education. This experience includes observing, summarizing and critically evaluating presentations, as well as preparing and delivering presentations and networking.

**HPEX 470. Exercise Programming and Leadership. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 310, HPEX 380 and HPEX 441. Provides knowledge and skills necessary for assessing, interpreting and designing health and activity programs for apparently healthy populations. Students develop leadership skills through presentation of ACSM exercise testing procedures and implementation of exercise prescriptions.

**HPEX 475. Cardiovascular Pathophysiology and Pharmacology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HPEX 375 and HPEX 440 or equivalents. Enrollment restricted to HPEX majors. Presents theoretical principles of electrocardiography and the effects of pharmacological intervention in the treatment of cardiovascular disease. Specific emphasis placed on myocardial ischemia, myocardial infarction and their treatment through exercise rehabilitation protocols. The impact of pharmacological agents on the ECG and on exercise is explored.

**HPEX 480. Professional Certification Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisites: HPEX 380, HPEX 441 and HPEX 470. Enrollment restricted to seniors in HPEX major. Provides structured experiences in the classroom, laboratory and exercise arenas to improve knowledge, skills and abilities in health-related physical fitness assessment and exercise programming. Supplements existing course work by correcting any deficiencies in learning competencies toward being a successful exercise professional. A review of certification materials is also an important component of the course.



**HPEX 491. Special Topic in Health, Physical Education and Exercise Science. 1-3 Hours.**

Semester course; 1-3 credits. Health, physical education and exercise science majors only. May be repeated up to a maximum of 3 credits. Offers students the opportunity to participate in an approved professional experience related to the students' knowledge base of general education, professional introduction and extensive core professional courses; may include research-based projects or more academically rigorous experiences; credits determined by the number of contact hours of the experience.

**HPEX 492. Independent Study in Health, Physical Education and Exercise Science. 1-3 Hours.**

Semester course; 1-3 credits. Health, physical education and exercise science majors only. May be repeated up to a maximum of 3 credits. Enables a student to create an individualized research project or professional experience based on specific professional needs and goals; must have adviser's approval; experiences based on the student's knowledge base of general education, professional introduction and extensive core courses; credits determined by the number of contact hours and extensiveness of the project.

**HPEX 493. Field Experience III. 3-12 Hours.**

Semester course; variable hours. 3-12 credits. Prerequisites: pass Praxis II; HPEX 393 with a minimum grade of C. Health, physical education and exercise science majors only. An in-depth field experience in a public school, health education/health promotion agency or other approved setting; designed to provide the pre-professional student with greater practical application of skills culminating in full responsibility for planning, implementing and evaluating the classroom, agency or facility activities; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain a course syllabus regarding prerequisites and specific course requirements.

**HPEX 494. Field Experience IV. 3-6 Hours.**

Semester course; variable hours. 3-6 credits. Prerequisites: pass Praxis II; HPEX 393 with a minimum grade of C. Health, physical education and exercise science majors only. An in-depth field experience in a public school, health education/health promotion agency or other approved setting; designed to provide the pre-professional student with greater practical application of skills culminating in full responsibility for planning, implementing and evaluating the classroom, agency or facility activities; a minimum of 50 contact hours per credit hour required; consult with adviser to obtain a course syllabus regarding prerequisites and specific course requirements.

**HPEX 495. Clinical Experience II. 6 Hours.**

Semester course; 6 clinical hours. 6 credits. Prerequisites: HPEX 395, senior standing, permission of instructor and minimum grade of C in all HPEX prerequisite courses. Enrollment restricted to HPEX majors. Students are also expected to maintain current CPR/AED/FA certification throughout the semester. Students should consult with an adviser or course instructor to obtain concentration-specific course prerequisites and course requirements. Fulfills capstone requirement. Addresses competencies in exercise science, health promotion and/or health science. Provides experiences at an approved affiliate site under the supervision of faculty and approved site supervisors. Students gain practical experience in routine, intermediate and advanced procedures associated with exercise science, health promotion and/or health science. A minimum of 40 contact hours per credit hour required.

**HPEX 496. Clinical Experience III. 3-6 Hours.**

Semester course; 6 clinical hours. 6 credits. Prerequisites: HPEX 395, senior standing, permission of instructor and minimum grade of C in all HPEX prerequisite courses. Enrollment restricted to HPEX majors. Students are also expected to maintain current CPR/AED/FA certification throughout the semester. Students should consult with an adviser or course instructor to obtain concentration-specific course prerequisites and course requirements. Addresses competencies in exercise science, health promotion and/or health science. Provides experiences at an approved affiliate site under the supervision of faculty and approved site supervisors. Students gain practical experience in routine, basic and advanced procedures associated with exercise science, health promotion and/or health science. A minimum of 40 contact hours per credit hour required.

**Health, Physical Education and Exercise Science Lab (HPEZ)****HPEZ 220. Introduction to Athletic Training Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: HPEX 220. Laboratory fee required. A laboratory to introduce the basic skills used by an athletic trainer in the prevention and care of athletic injuries in the physically active.

**HPEZ 320. Upper Extremity Assessment of Athletic Injuries Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: HPEX 320. Laboratory fee required. This laboratory course includes practice in the skills of assessment and management of upper extremity athletic injuries in the physically active. Includes head, neck, thoracic, abdominal, shoulder, elbow, forearm, wrist, hand and finger injuries.

**HPEZ 321. Lower Extremity Assessment of Athletic Injuries Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: HPEX 321. Laboratory fee required. This laboratory course is designed to acquaint the student with the proper assessment and treatment procedures for lower extremity athletic injuries in the physically active. The lab will include prevention, care and treatment of lower back, hip, thigh, knee, lower leg, ankle and foot athletic injuries.

**HPEZ 322. Therapeutic Exercise in Athletic Training Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: HPEX 322. This laboratory course is designed to acquaint the student with the proper use of therapeutic exercise in the treatment and rehabilitation of athletic injuries in the physically active. The lab course will include the skills of the therapeutic exercise used in the treatment of groin, thigh, hip, knee, lower leg, ankle, foot, shoulder, elbow, wrist, hand, finger and back athletic injuries.

**HPEZ 324. Therapeutic Modalities in Athletic Training Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: HPEX 324. Laboratory fee required. This laboratory course will allow the student to develop the practical skills required to properly apply therapeutic modalities used to treat athletic injuries in the physically active.

**HPEZ 334. Measurement and Analysis in Teaching and Exercise Science Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: HPEX 334. Laboratory experience applying knowledge and skills presented in HPEX 334.



**HPEZ 373. Structural Kinesiology Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prerequisite: BIOL 205. Corequisite: HPEX 373. Laboratory experience applying knowledge and theory from HPEX 373.

**HPEZ 375. Physiology of Exercise Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prerequisite: PHIS 206. Corequisite: HPEX 375. Provides practical application of the physiological principles presented in HPEX 375; assists students in the development of practical application competencies associated with assessment of acute and chronic effects of exercise on the human body.

**HPEZ 450. Service-learning in Community Health Education Planning and Evaluation. 1 Hour.**

Semester course; 1 service-learning/laboratory hour. 1 credit. Corequisite: HPEX 450. Provides experience working with community partners to gain firsthand exposure to specific target populations, observing the needs of those populations and current efforts, if any, to address those needs. Community partners include nonprofit agencies, schools, worksites, hospitals and state and local health departments.

**History (HIST)****HIST 101. Survey of European History. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. A survey of European civilization from the ancient world to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Europe's place in the world. First semester: to 16th century. Second semester: 16th century to the present.

**HIST 102. Survey of European History. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. A survey of European civilization from the ancient world to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Europe's place in the world. First semester: to 16th century. Second semester: 16th century to the present.

**HIST 103. Survey of American History. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. A survey of American civilization from prehistory to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined America's place in the world. First semester: to Reconstruction. Second semester: Reconstruction to present.

**HIST 104. Survey of American History. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. A survey of American civilization from prehistory to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined America's place in the world. First semester: to Reconstruction. Second semester: Reconstruction to present.

**HIST 105. Survey of African History. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of African civilizations from prehistory to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Africa's place in the world. First semester: to 1800. Second semester: 1800 to the present. Crosslisted as: AFAM 105.

**HIST 106. Survey of African History. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of African civilizations from prehistory to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Africa's place in the world. First semester: to 1800. Second semester: 1800 to the present. Crosslisted as: AFAM 106.

**HIST 107. Survey of East Asian Civilizations. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. A survey of East Asian civilizations (China and Japan) from prehistory to the present, emphasizing the events, ideas and institutions that shaped, influenced and defined East Asia's place in the world. First semester: to the 14th century. Second semester: from the 14th century to the present.

**HIST 108. Survey of East Asian Civilizations. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. A survey of East Asian civilizations (China and Japan) from prehistory to the present, emphasizing the events, ideas and institutions that shaped, influenced and defined East Asia's place in the world. First semester: to the 14th century. Second semester: from the 14th century to the present.

**HIST 109. Survey of Latin American History. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. A survey of Latin American civilization from its early civilizations to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Latin America's place in the world. First semester: to 1824. Second semester: 1824 to the present.

**HIST 110. Survey of Latin American History. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. A survey of Latin American civilization from its early civilizations to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Latin America's place in the world. First semester: to 1824. Second semester: 1824 to the present.

**HIST 191. Topics in History. 1-3 Hours.**

Semester course; variable hours. 1-3 credits per semester. Maximum total of 6 credits. The study of a selected topic or topics in history. See the Schedule of Classes for specific topics to be offered each semester.

**HIST 201. The Art of Historical Detection: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduces non-history majors to the methods of the discipline by undertaking a series of case studies in historical inquiry. Each case study will consist of a close examination of a single historical question, covering the general background to that question and exploring relevant primary and secondary sources. Students will then use this evidence to propose well-reasoned solutions to the question at hand.

**HIST 300. Introduction to Historical Study. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. History majors must complete HIST 300 with at least a grade of C prior to enrolling in more than six credits of 300- or 400-level history courses. This introduction to the historical discipline is required of all history majors. It is designed to enhance basic research, writing and study skills in order to increase student appreciation of, and performance in, the advanced courses within the history major.

**HIST 301. The Ancient Near East. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the ancient Near Eastern civilizations from the preliterate period to the end of Kassite rule in Babylonia (c. 1160 B.C.). Crosslisted as: RELS 315.

**HIST 302. Ancient Egypt. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A general survey of the history and culture of ancient Egypt from the Predynastic Period through the age of the New Kingdom. In addition to the historical reconstruction, emphasis is placed on the art, literature and religion of each of the major periods.

**HIST 303. Greek Civilization. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the unique cultural heritage of Greece and the historical patterns that rose from it, from the Heroic Age to the urban worlds after Alexander, 1400 B.C.-146 B.C.

**HIST 304. Roman Civilization. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of Roman history as it derived from Roman cultural institutions, from the Etruscan period through the conflict of the pagan and Christian worlds and advent of the barbarians, 753 B.C.-A.D. 454.

**HIST 307. The High Middle Ages. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A detailed historical analysis of the Gregorian Revolution, the Crusades, the 12th-century Renaissance, the Thomistic World and the death of medieval civilization. Crosslisted as: RELS 308.

**HIST 310. The Early Middle Ages. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A topical, thematic, integrative and problems approach to the emergence of a distinctive European community during the period frequently alluded to as the "Dark Ages.

**HIST 311. High and Later Middle Ages. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A detailed historical overview of developments in Western Europe from the end of the first millennium through the end of the 15th century. Crosslisted as: RELS 308.

**HIST 312. Europe in the Early Modern Period, 1350-1650. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Describes the political, intellectual, religious and social developments in Europe from the Black Death through the wars of religion, including the Renaissance, the Reformation and the Voyages of Exploration.

**HIST 313. Europe in Absolutism and Enlightenment, 1648-1815. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines the political, social and economic orders of Old Regime Europe in the context of their increasing contradictions; introduces the cultural and intellectual forces that helped challenge that regime; culminates in the French Revolution and Napoleon.

**HIST 314. The Zenith of European Power, 1815-1914. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the period in which the nations of Europe reached their height of world power between the reconstruction of Europe after the Napoleonic Wars and the eve of World War I. Topics include the rise of nationalism, liberalism and socialism; the spread of capitalism and industrial society; the beginnings of mass politics; the new imperialism; the diplomatic revolution in the European state system before World War I.

**HIST 315. The Age of Total War in Europe, 1914-1945. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the transformation of European society precipitated by World War I and World War II. Emphasis is placed on the origin, nature and repercussions of total war; the crisis of democracy and the rise of modern dictatorships; changes in political, economic and social institutions; and the decline of European power.

**HIST 316. Postwar Europe, 1945 to the Present. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of Europe's social, economic and political recovery after World War II and of the transformation of Europe from the center toward the periphery of world power.

**HIST 317. History of France I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A history of France from Gallo-Roman times through the French Revolution and the Napoleonic era.

**HIST 318. History of France II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A history of France from 1815 to the present.

**HIST 319. History of Germany I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Covers major developments in Germany from the 30 Years War and rise of Prussia through the unification of the German nation-state in 1871.

**HIST 320. History of Germany II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Covers major developments in Germany from 1871 through World War I, Weimar, Third Reich, World War II and reunification in 1990.

**HIST 321. The Holocaust. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A multidisciplinary examination of the events leading to and culminating in the Nazi extermination of six million Jews; the historical settings of European Jewry and of German fascism; the role of traditional anti-Semitism; the psychology of aggressor and victim; the Holocaust in art and literature and the moral implications for today.

**HIST 322. Nazi Germany. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The origin and nature of Hitler's Third Reich. A study of the failure of the Weimar Republic; genesis of the Nazi racial ideology and party structure; the Nazi political, social and cultural order after the seizure of power; Nazi foreign policy leading to war and genocide; and an analysis of the personality of Hitler.

**HIST 324. History of Early Modern Britain. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Explores the development of British politics, society and culture from the Tudor Revolution in government and through the Reformation, English civil wars and Restoration.

**HIST 325. History of Modern Britain. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Explores the development of British politics and society from the Restoration to the mid-20th century, including such topics as the Whig oligarchy, the Industrial Revolution, Victorianism, the impact of the world wars and the problems of Empire.

**HIST 326. The British Empire. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines the origin, development and decline of British overseas expansion from the late 16th century through the mid-20th century, including colonial settlements in Ireland, North America, the Caribbean, Australia and South Africa; dependencies and protectorates in Africa and the Middle East; and the empire of India. Focuses on the political and legal structures that enabled the administration and subordination of such a large and fragmented area and assesses the extent to which empire shaped and complicated gender, class and racial relations both at home and throughout the British imperial world.

**HIST 327. History of Russia I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Russian history to 1855, emphasizing the development of political and social institutions and Russia's unique position between Europe and Asia.

**HIST 328. History of Russia II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Russian history from 1855 to the present, emphasizing the development of political and social institutions and Russia's unique position between Europe and Asia.

**HIST 329. History of Spain and Portugal. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of the history of the Iberian peninsula from ancient times to the present, with an emphasis on the distinctive culture and attitude toward life that developed south of the Pyrenees.

**HIST 330. History of Women in Europe I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of European women from antiquity to the Enlightenment. A major focus will be primary sources by and about women. Crosslisted as: GSWS 339.

**HIST 331. History of Women in Europe II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of European women from the French Revolution to the present. A major focus will be primary sources by and about women. Crosslisted as: GSWS 340.

**HIST 332. History in Film. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 6 credits with different topics. An examination of the uses and misuses of historical events and personalities in film. Lectures and readings are used to critically analyze films dealing with biographies, events and propaganda.

**HIST 333. History of the Jewish People I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the Jewish people from the biblical period to the early modern period, including the Israelite conquest of Canaan, Judea in Hellenistic and Roman times, the Diaspora in Islam and in Europe, social and cultural trends, and Jewish settlement in the Ottoman Empire. Crosslisted as: RELS 318.

**HIST 334. History of the Jewish People II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the Jewish people from the early modern to the present, including the impact of the Emancipation, the rise of the American Jewish community, the impact of modernism and growth of Reform, the beginnings and growth of Zionism, restoration in Palestine, the Holocaust, the creation of Israel, and the relations of Israel and world Jewry. Crosslisted as: RELS 319.

**HIST 335. History of Christianity I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A historical and theological examination of Christianity from its origin to the early modern period, or the age of the Reformations. Emphasis is placed upon an understanding of leading events, ideas, movements and persons in their historical settings. Crosslisted as: RELS 327.

**HIST 336. History of Christianity II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A historical and theological examination of Christianity from ca. 1500 to the present. Emphasis is placed upon an understanding of leading events, ideas, movements and persons in their historical settings.

**HIST 339. History of Women in Europe. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. A history of European women from the Greeks to the contemporary world. A major focus of both courses will be primary sources by and about women. Semester covers antiquity to the Enlightenment. Crosslisted as: GSWS 339.

**HIST 340. The Middle East, 600-1600. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Explores two transformative historical events that took place in the Middle East between the sixth and 16th centuries: 1) the emergence of Islam and the development of the Islamic Empire and its social, cultural and political legacy in the Middle East (seventh to 10th centuries) and 2) the influx of outsiders to the region, such as the Turkish-speaking tribes, the crusaders and the Mongols, and the role these newcomers played in shaping the Middle East starting in the 10th century.

**HIST 341. Modern Middle East. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Analysis of the history, problems and prospects of the nations and peoples of the Middle East with emphasis on developments since the Balfour Declaration of 1917.

**HIST 342. Early Modern Ottoman Empire. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Explores the history of the Ottoman Empire from around mid-15th century until roughly the late-18th century. Examines the Ottoman Empire as a Euro-Mediterranean polity, exploring its social, cultural, economic and political history from a global perspective.

**HIST 343. Modern Ottoman Empire. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Explores the transformations of the late-Ottoman state and society by organizing the material around several historical processes and frameworks, such as the phenomenon of the gunpowder empires, integration of the empire to the global market, the decline paradigm, impact of colonialism and imperialism, Tanzimat reforms, the shift from subjecthood to citizenship, modernity, transformation of religious identities, state and nation formation, nationalism, secularism, gender and war mobilization.

**HIST 344. American Military History to 1900. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Investigates the emergence and evolution of the American military from 1600 to 1900, with a focus on nation building and nationalism, the relationship between the civil and military spheres, professionalization, the experiences of the armed forces, strategic and tactical evolution, and the relationships among war, technology and nature.

**HIST 345. American Colonies, 1450-1776. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of the development of the 13 original colonies; the establishment and growth of society, politics and the economy; and modification in the relationship between the provinces and Great Britain.

**HIST 346. The American Revolutionary Era, 1763-1800. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of the late-18th-century revolutions which molded the American political system – the revolution of colonial Englishmen against Great Britain and the revolution of the nationalists against the government established by the American Revolution, which produced and firmly established the United States Constitution.

**HIST 347. Antebellum America, 1800-1860. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Federalist era to 1860. A study of the events, forces and personalities that shaped Antebellum America and led to Southern secession and Civil War.

**HIST 348. The American Civil War and Reconstruction. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the major events, forces, personalities and significance of the Civil War and Reconstruction eras.

**HIST 349. The Emergence of Modern America, 1877-1914. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of the major political, legal, social and economic trends in the United States at this time, focusing on the industrialization of the nation and the resulting effects it had on such diverse matters as urbanization, immigration, economic distribution and cultural affairs, culminating in the Progressive reform movement.

**HIST 350. U.S. History, 1900-1945. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the political, social, economic and cultural history of the United States from 1900 to 1945, with emphasis on how the American people have responded to reform, war, prosperity, depression, international status and changing relationships within government and society.

**HIST 351. U.S. History Since 1945. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the political, social, economic and cultural history of the United States in the 20th century, with emphasis on how the American people have responded to reform, war, prosperity, depression, international status and changing relationships within government and society.

**HIST 352. History of the South I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A regional history of the Old South from the colonial period to 1861, placing particular emphasis upon the distinctive culture and problems of the South and its significance in the history of the United States.

**HIST 353. History of the South II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A regional history of the New South from 1865 to the present, placing particular emphasis upon the distinctive culture and problems of the South and its significance in the history of the United States.

**HIST 354. History of Native Americans in the South. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines the history of Native Americans in the American South and how colonial encounters with Europeans impacted life in indigenous towns, villages and farmsteads.

**HIST 355. Native Americans in Modern America. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines some of the key historical and cultural issues in American Indian history during the 20th century.

**HIST 356. History of Virginia I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Focuses on the central themes, events and personalities of the state's history from the pre-colonial period to 1865.

**HIST 357. History of Virginia II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Focuses on the central themes, events and personalities of the state's history from 1865 to the present.

**HIST 358. History of the American Frontier. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of the western movement in the United States from the time the first outposts were established to the end of the frontier in the 19th century. Particular attention to the influence of the frontier upon the American mind and ideals.

**HIST 360. The Long Civil Rights Movement. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines race relations and changes to race relations, focusing on African-Americans in the United States' South but including related struggles for civil rights and equality from the late-1800s to the present.

**HIST 361. Americans from Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the history and culture of blacks in the United States, designed to analyze some of the most important aspects of black life and the attitudes of the dominant society within which blacks lived. The second semester emphasizes the changing status, expectations and ideologies of black Americans in the 20th century. First semester: to 1877. Second semester: since 1877. Crosslisted as: AFAM 361.

**HIST 362. Americans from Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the history and culture of blacks in the United States, designed to analyze some of the most important aspects of black life and the attitudes of the dominant society within which blacks lived. The second semester emphasizes the changing status, expectations and ideologies of black Americans in the 20th century. First semester: to 1877. Second semester: since 1877. Crosslisted as: AFAM 362.

**HIST 363. American Religious History I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of religious movements, events and ideas in America from indigenous and colonial traditions to the Civil War, with attention to the diversity of religious expression and the relationship between church and state.

**HIST 364. American Religious History II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of religious movements, events and ideas in America from the Civil War to the present, with attention to the diversity of religious expression and the relationship between church and state.

**HIST 365. American Women's History I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Students will analyze historical changes in the social, cultural, political and economic position of women in America from the colonial period through the 1848 Seneca Falls Convention. Methods include reading, lecture and discussion. Topics include differences and similarities of women's experiences across lines of class, race and ethnicity, the struggle for suffrage and social reform, shifting gender roles and changing employment opportunities. Crosslisted as: GSWS 341.

**HIST 366. American Women's History II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Through reading, lecture and discussion, students will analyze historical changes in the social, cultural, political and economic position of women in America from 1848 to the present. Topics include differences and similarities of women's experiences across lines of class, race and ethnicity; the struggle for suffrage and social reform; shifting gender roles; and changing employment opportunities.

**HIST 370. History of Central America. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An exploration of the history of the region beginning with pre-Columbian civilizations and continuing to the present. Topics include the Spanish conquest, the liberal-conservative struggle, U.S. gunboat diplomacy, the Sandinista Revolution, civil wars in El Salvador and Guatemala and current challenges to democracy in the region.

**HIST 371. History of Mexico. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of Mexican history, including topics such as the pre-Columbian civilizations, the Spanish conquest and the colonial order, as well as independence, the struggle for reform, revolution and the development of the modern state.

**HIST 372. History of Brazil. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of Brazilian history including topics such as the pre-Columbian civilizations, Portuguese colonialism, the independent empire and the republic, and populism and the modern state.



**HIST 373. History of the Andes to 1800. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A critical view of the historical process of the Andean region from the pre-Columbian period to independence from Spain. Focuses mainly on the core of the region, which currently comprises the territories of Bolivia, Ecuador and Peru. Special attention to the indigenous population of the Andes – also known as "Indians," "Andeans" or "Amerindians" – and their interactions with other ethnic groups (Europeans, Criollos, Mestizos, as well as Africans and their descendants) in the political, economic, social and cultural realms.

**HIST 374. History of the Andes From 1800. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A critical view of the historical process of the Andean region from independence from Spain to the present. Focuses mainly on the core of the region, which currently comprises the territories of Bolivia, Ecuador and Peru. Special attention to the indigenous population of the Andes – also known as "Indians," "Andeans" or "Amerindians" – and their interactions with other ethnic groups (Europeans, Criollos, Mestizos, as well as Africans and their descendants) in the political, economic, social and cultural realms.

**HIST 376. Caribbean History to 1838. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An exploration of changes in the structure of Caribbean society from the late 15th century to 1838, with emphasis on the development of plantation slavery, social stratification, race, slave resistance, the Haitian Revolution, African cultural patterns and abolition. Crosslisted as: AFAM 392.

**HIST 377. Caribbean History Since 1838. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Covers major developments in the history of the Caribbean in the period after the British abolition of slavery in 1834, with a major focus on the social and economic aspects of change.

**HIST 378. Atlantic Slavery. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines social and economic aspects of slavery in the Atlantic world, principally Africa, the Caribbean, the United States and Canada.

**HIST 379. The History of Modern Japan. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course will offer a detailed examination of Japan's modern history, from the rise of Tokugawa rule in 1600 to the end of World War II. A general overview of Japan's traditional society will give way to a historical analysis of the major social, cultural, political and intellectual changes that occurred in Japan throughout this time period.

**HIST 380. Africa and the Americas: Slavery, Gender and Race. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines various aspects of slavery in Africa and selected parts of the African diaspora, including the United States, Canada and the Caribbean, with special emphasis on the role played by race and gender. Topics will include African conditions of servility, the trans-Atlantic trade in enslaved Africans, and chattel slavery, demography, labor, law, discipline, abuse, resistance and status. Crosslisted as: AFAM 390/GSW 390.

**HIST 381. History of West Africa to 1800. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the transformation of West African societies from early times to 1800, with emphasis on the rise of states and empires, the introduction, spread and impact of Islam, the Atlantic slave trade and its effects, and colonialism. Crosslisted as: AFAM 387.

**HIST 383. History of Southern Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the history and culture of the peoples of southern Africa. Deals with the areas that presently are the Republic of South Africa, Lesotho, Swaziland, Botswana, Namibia and Zimbabwe. Emphasizes the interaction among the various communities and ethnolinguistic groups in southern Africa. Crosslisted as: AFAM 389.

**HIST 384. Africa: Social, Cultural and Economic History. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of economic, social and cultural developments in Africa from the beginning of the 19th century to the present, with emphasis on agricultural and industrial development, trade, Africa's involvement in the world economy, changes in labor systems, racial dominance, African initiatives and resistance, religion and social evolution, and Africa in world affairs. Crosslisted as: AFAM 388.

**HIST 385. The History of Modern Japan. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course will offer a detailed examination of Japan's modern history, from the rise of Tokugawa rule in 1600 to the end of World War II. A general overview of Japan's traditional society will give way to a historical analysis of the major social, cultural, political and intellectual changes that occurred in Japan throughout this time period.

**HIST 386. History of Late Imperial China, 900-1800. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines the history of China from 900 to 1800 CE. A general overview of China's political economy is followed by a historical analysis of the major social, cultural, political, intellectual and economic changes that occurred in China between 900 and 1800 CE. In addition, students will be introduced to such concepts and issues as empire building, conquest dynasties, steppe and sedentary societies, sociocultural history and Western and Chinese historiography.

**HIST 387. The History of Modern China, 1800 to the Present. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines China's modern history beginning at the height of the Qing Dynasty (1644-1912) in 1800. A general overview of China's traditional political economy is followed by a historical analysis of the major social, cultural, political, intellectual and economic changes that occurred in China from 1800 to the present. This course is divided into three sections: the first examines the factors leading to the collapse of China's last dynasty in 1912; the second focuses on the revolutionary changes taking place in China during the first half of the 20th century (from 1912 to 1949); and the final section looks at Communist China since 1949.

**HIST 388. Africa: Social, Cultural and Economic History. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of economic, social and cultural developments in Africa from the beginning of the 19th century to the present, with emphasis on agricultural and industrial development, trade, Africa's involvement in the world economy, changes in labor systems, racial dominance, African initiatives and resistance, religion and social evolution and Africa in world affairs. Crosslisted as: AFAM 388.

**HIST 389. History in Film: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 6 credits with different topics. An examination of the uses and misuses of historical events and personalities in film. Lectures and readings are used to critically analyze films dealing with biographies, events and propaganda.



**HIST 390. Historical Archaeology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 or ANTH 105/INTL 104, and any history course. A review of historical archaeology, recognizing its contemporary emphasis on the spread of European cultures across the globe beginning in the 15th century. Methods and findings of archaeological research from the United States, Europe and Africa will be covered with special emphasis on the study of documents and artifacts related to the emergence and present state of the modern world. Students will participate in field research. Crosslisted as: ANTH 394.

**HIST 391. Topics in History. 1-3 Hours.**

Semester course; 1, 2 or 3 lecture hours. Variable credit. May be repeated with different topics for a maximum of 9 credits. An in-depth study of a selected topic in history. See the Schedule of Classes for specific topics to be offered each semester.

**HIST 392. Revolutions in Science I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of the history of science from the ancient Greeks to 1800, focusing on the development of scientific ideas, practices and institutions in Western society. Crosslisted as: SCTS 392.

**HIST 393. Revolutions in Science II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of the history of science from 1800 to the present, focusing on the development of scientific ideas, practices and institutions in Western society. Crosslisted as: SCTS 393.

**HIST 394. Historical Archaeology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 or ANTH 105/INTL 104, and any history course. A review of historical archaeology, recognizing its contemporary emphasis on the spread of European cultures across the globe beginning in the 15th century. Methods and findings of archaeological research from the United States, Europe and Africa will be covered with special emphasis on the study of documents and artifacts related to the emergence and present state of the modern world. Students will participate in field research. Crosslisted as: ANTH 394.

**HIST 397. Genetics and Society: 1865 to the Present. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An investigation of the science and technology of heredity in its historical, cultural and political contexts, emphasizing the ways in which genetic theories have been applied in attempting to solve social and biological problems. Crosslisted as: SCTS 397.

**HIST 398. History of Medicine and Public Health: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different thematic content for a maximum of six credits. Studies in selected topics in the history of medicine, medical science or public health. Includes introduction to the interdisciplinary approaches practiced in the history of medicine as well as the historical content and relevant analytical skills needed to examine the specific course theme. Crosslisted as: SCTS 398.

**HIST 399. Introduction to Science and Technology Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to the study of science, technology and medicine from political, sociological and historical perspectives, focusing on case studies that illustrate the methods and theories used to examine the structure and behavior of the scientific community and the role of scientific knowledge in shaping public culture. Crosslisted as: GVPA 399/SCTS 300.

**HIST 401. Studies in Ancient History: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: 3 credits of HIST at the 300-level or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of ancient history.

**HIST 402. Studies in Medieval History: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: 3 credits of HIST at the 300-level or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of medieval history.

**HIST 403. Studies in Early Modern European History: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Repeatable once, with a different topic, for credit. Prerequisite: 3 credits of HIST at the 300-level or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of early modern European history.

**HIST 404. Studies in Modern European History: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Repeatable once, with a different topic, for credit. Prerequisite: 3 credits of HIST at the 300-level or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of modern European history.

**HIST 406. Studies in Middle Eastern History: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: 3 credits of HIST at the 300-level or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of Middle Eastern history.

**HIST 407. Studies in Early American History: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: 3 credits of HIST at the 300-level or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of early American history.

**HIST 408. Studies in Modern American History: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: 3 credits of HIST at the 300-level or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of modern American history.

**HIST 409. Studies in Latin American History: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: 3 credits of HIST at the 300-level or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of Latin American history.

**HIST 410. Studies in African History: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours, 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: 3 credits of HIST at the 300-level or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of African history.

**HIST 411. Studies in the African Diaspora: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: 3 credits of HIST at the 300-level or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of the African diaspora.

**HIST 412. Studies in Asian History: \_\_\_\_ 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: 3 credits of HIST at the 300-level or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of Asian history.

**HIST 413. Studies in Atlantic History: \_\_\_\_ 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: 3 credits of HIST at the 300-level or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of Atlantic history.

**HIST 414. Studies in Indigenous History: \_\_\_\_ 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: 3 credits of HIST at the 300-level or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of indigenous history.

**HIST 415. Studies in the History of Religion: \_\_\_\_ 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: 3 credits of HIST at the 300-level or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of religious history.

**HIST 416. Studies in the History of Women, Gender and Sexuality: \_\_\_\_ 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 credits of 300-level HIST or permission of instructor. Repeatable once, with a different topic, for credit. Courses taught under this heading provide advanced study and analysis of the theory and field of the history of women, gender and sexuality.

**HIST 417. Studies in African American History: \_\_\_\_ 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: 3 credits of HIST at the 300-level or permission of instructor. Courses taught under this heading provide advanced study and analysis of the theory and field of African American history.

**HIST 420. Studies in Historical Method: \_\_\_\_ 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: any 300-level HIST course. Focuses on a particular methodology used by historians as they investigate the past.

**HIST 421. Studies in Comparative History: \_\_\_\_ 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once, with a different topic, for credit. Prerequisite: any 300-level HIST course. Undertakes a topic that cuts across regions and cultures, making comparative judgments about human events.

**HIST 485. Seminar in Historiography. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated for maximum of 6 credits with different topics. Introduction to questions in historiography, meaning, methodology and interpretation in the teaching and writing of history.

**HIST 490. Seminar in History. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 9 credits. Prerequisite: HIST 300. Research and analysis of a selected historical topic in a seminar setting. See the Schedule of Classes for each semester's offerings.

**HIST 492. Independent Study. 2-4 Hours.**

Semester course; variable hours. 2-4 credits per semester. Maximum total of 6 credits. Open generally to students of only junior and senior standing who have acquired 12 credits in the departmental disciplines. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration of the course.

**HIST 493. Internship. 2-4 Hours.**

Semester course; variable hours; 2-4 credits per semester. May be repeated for a maximum total of 6 credits. Prerequisite: HIST 300. Open generally to students of senior standing. Students receive credit for work on historical projects with approved agencies. Determination of the amount of credit and permission of departmental internship coordinator must be procured prior to registration for the course.

**Humanities and Sciences (HUMS)****HUMS 100. Intensified Problem Solving in Chemistry 100. 2 Hours.**

Semester course; 4 workshop hours. 2 credits. Prerequisite: Students must be eligible to take MATH 131 or higher. Corequisite: CHEM 100. Problem-solving sessions will engage students in cooperative learning in open discussions of the elementary principles of chemistry. Students work on chemistry problems in small groups in which each student participates in the presentation of problem solutions to the class. Students receive mock quizzes and exams and will be given assistance on homework problems assigned in their chemistry lecture. This course is for students who do not meet the criteria for enrollment in CHEM 101. These credits may not be used to satisfy any chemistry course requirements in the College of Humanities and Sciences.

**HUMS 101. Intensified Problem Solving in Chemistry 101. 2 Hours.**

Semester course; 4 workshop hours. 2 credits. Prerequisite: CHEM 100 with a grade of C or higher or a satisfactory score on the Chemistry Placement Test. Students must be eligible to take MATH 151 or higher. Corequisite: CHEM 101. Problem-solving sessions will encompass the fundamental principles and theories of chemistry. Students will form and work in small study groups and must participate in open discussions of the concepts of chemistry. Each student participates in the presentation of problem solutions to the class. Students will receive mock quizzes and exams and will be given assistance on homework problems assigned in the general chemistry lecture. These credits may not be used to satisfy any chemistry course requirements in the College of Humanities and Sciences.

**HUMS 102. Intensified Problem Solving in Chemistry 102. 2 Hours.**

Semester course; 3 workshop hours. 2 credits. Prerequisite: CHEM 101 with a grade of C or higher, MATH 151 or higher. Corequisite: CHEM 102. Problem-solving sessions will encompass the fundamental principles and theories of chemistry. Students will form and work in small study groups where they engage in cooperative learning and must participate in open discussions of the concepts of chemistry. Each student participates in the presentation of problem solutions to the class. Students will receive mock quizzes and exams and will be given assistance on homework problems assigned in the general chemistry lecture. These credits may not be used to satisfy any chemistry course requirements in the College of Humanities and Sciences.

**HUMS 202. Choices in a Consumer Society. 1 Hour.**

Semester course. 1 credit. Corequisite: UNIV 112. Provides a framework for understanding the nature of choices made in a consumer society, with an emphasis on the financial consequences of those choices. Students will gain the practical knowledge needed to make informed personal financial decisions as they address immediate, short-term and long-term consumer choices. Administered primarily as a self-paced, computer-aided instructional course.

**HUMS 250. Reading Film. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 111 or equivalent. Develops students' visual literacy by exploring and analyzing the various elements of film (cinematography, lighting, editing, art direction, acting and sound, among others). Examples will be drawn from both U.S. and world cinema and from all eras of filmmaking.

**HUMS 291. Special Topics in the Humanities and Sciences. 1-4 Hours.**

Semester course; 1-4 credits. May be repeated with different content. Specialized topics in the liberal arts and sciences designed to provide an overview of a topic not provided by an existing course or program. May be multidisciplinary. Graded as pass/fail or normal letter grading at the option of the instructor.

**HUMS 300. Great Questions of the Social Sciences. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The social sciences explore human aspects of the world in fields of study that include anthropology, criminology, economics, education, geography, law, political science, psychology and sociology. This course explores fundamental questions of social science and examines their historical and contemporary relevance.

**HUMS 391. Special Topics in the Humanities and Sciences. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. May be repeated with different content. Specialized topics in the liberal arts and sciences designed to provide an overview of a topic not provided by an existing course or program. May be multidisciplinary. Graded as pass/fail or normal letter grading at the option of the instructor.

**Humanities and Sciences – Interdisciplinary (HUSI)****HUSI 190. College Seminar. 1 Hour.**

1 lecture hour. 1 credit. May be repeated once for credit. Open only to students who participate in these programs. A seminar designed for first-year programs coordinated through the office of the dean of the College of Humanities and Sciences. Designed to help students integrate general education courses.

**HUSI 491. College Topics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of 6 credits. Open primarily to seniors; others with permission of instructor. A discussion of complex issues that are of enduring value or of critical interest to society. The goals of the course are to (1) bring general principles from disciplinary or a variety of disciplinary contexts to bear on specific problems; (2) exercise critical thinking; (3) understand and integrate diverse perspectives; and (4) explore models of decision-making, underlying assumptions and implications. See the Schedule of Classes for specific topics to be offered each semester.

**Interdisciplinary Science (INSC)****INSC 201. Energy!. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 131, 141, 151, 200, or higher; or MGMT 171, 212, or 301; or STAT 208, 210, 212, or higher; or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. A study of global energy demands, how they are being met, environmental consequences and alternative energy sources.

**INSC 300. Experiencing Science. 3 Hours.**

Semester course; 5 studio hours. 3 credits. Prerequisites: 4 credits in biology, 3 credits in physical science, 3 credits in mathematics, and STAT 208, 210, 212, or 312. Study of the methods and processes used by scientists in investigations. Guided, active replication of great discoveries in major scientific disciplines in physical science, life science and earth science.

**INSC 301. Investigatory Mathematics and Science. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 4 credits in biology, 4 credits in physical science, 3 credits in mathematics and STAT 208 or STAT 210. Students investigate real-world science problems, formulate model solutions to the problems, produce project reports and present their solutions to class. Problems selected from areas including water quality, epidemics and spread of diseases, heat loss and gain, genetics and drugs in the body.

**INSC 310. Content of Elementary Science. 3 Hours.**

Semester course; 4 lecture/laboratory hours. 3 credits. Prerequisite: 11 credits of science courses. Designed for preservice elementary school teachers. Develops mastery of select topics in the physical, earth and life science strands appropriate to the K-6 level. Topics will be presented in the context of hands-on activities designed for the classroom, using techniques such as guided inquiry and the learning cycle.

**INSC 490. Capstone Research Experience in Interdisciplinary Science. 1 Hour.**

Semester course; 1 credit. Prerequisite: UNIV 200 or HONR 200. Restricted to seniors in the science major with at least 85 credit hours taken toward the degree. Intensive study of a contemporary scientific problem engaging more than one scientific discipline. Emphasis on understanding scientific research and science writing. Course taught online.

**International Studies (INTL)****INTL 101. Human Societies and Globalization. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An interdisciplinary inquiry into how societies around the world are organized and how they are interrelated on social, economic, political and cultural dimensions. The course is organized around themes that are important to prominent globalization processes – topics such as human rights, global inequalities, cultural globalization, global crime, globalization and religion, the global mass media, and environmental issues. Students also explore the implications of rapid social change for international issues and interpersonal interaction.

**INTL 102. Introduction to Political Economy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Seminar on the development of critical thought and economic analysis of policy issues. Focus is on how policy choices affect society and the individual, the economic methodology that guides policy choices, and the institutional and political environments within which policy is derived. Issues cover a broad range of topics including environmental issues, tax policy, inflation expectations, unemployment, foreign trade and the effectiveness of fiscal and monetary policies. Crosslisted as: ECON 101.

**INTL 103. Introduction to Anthropology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A general survey of anthropology with emphasis on learning about and from global cultures, and on the four fields of anthropology. Crosslisted as: ANTH 103.

**INTL 104. Introduction to Archaeology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of archaeological sites, methods and theories from around the world, from the earliest human cultures, to the rise and spread of civilizations, to the modern era. Crosslisted as: ANTH 105.

**INTL 105. International Relations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introductory analysis of interstate relations and world affairs. Attention focuses on theories of international politics, military capabilities and their application, international organizations, global economic trends, domestic sources of state behavior and other selected issues as appropriate. Crosslisted as: POLI 105.

**INTL 151. Global Communications. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Explores how communication media and globalization drive each other and how they both impact the nation-state as well as international institutions. Examines how technology, the global economy and international media corporations influence culture, politics, business, law and other institutions in countries around the world. Explores the relationship between media systems and governments and how both are affected by technology and globalization. Crosslisted as: MASC 151.

**INTL 200. Introduction to African Societies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course introduces the student to the African continent, its peoples and cultures. It covers such general characteristics as the physical and geographical features, climate, topography, traditional economies, languages, religions, social systems and other cultural features that are traditional to its people. Crosslisted as: AFAM 200/ANTH 200.

**INTL 201. Introduction to the Middle East and North Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An interdisciplinary introduction to the region of the Middle East and North Africa, its peoples and cultures. Covers the geography, climate, economy, language, religious and social systems, as well as other social systems and cultural features that are traditional to the peoples of the region.

**INTL 202. Identities in a Global Community. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to intercultural communication. Designed to help students develop an understanding of cultures, to appreciate the opportunities and challenges that each culture presents to people and to learn how individuals have dealt with those opportunities and challenges.

**INTL 203. Cultural Texts and Contexts: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Through the analysis and interpretation of literary, cinematic and other cultural texts, this course explores the ways cultural and national identities have been shaped, imagined and contested in various regions of the world. While responding to the readings and films as artistic manifestations or social documents, students will also become familiar with the aesthetic, political and social contexts in which the works were and are produced. See the Schedule of Classes for specific topics to be offered each semester. Crosslisted as: WRLD 203.

**INTL 204. Language and Groups in the United States. 3,4 Hours.**

Semester course; 3-4 lecture hours. 3-4 credits. Taught in English. This course introduces students to the sociocultural experience and formation of identity of non-English-speaking peoples in the United States. Students explore the dynamic between English and a specific heritage language and its interaction with artistic, cultural and social issues through fiction and nonfiction texts, films and multimedia pertaining to specific language groups, such as: Latinos, Italian-Americans, German-Americans or Native Americans. See the Schedule of Classes for specific topics to be offered each semester. Crosslisted as: FRLG 204.

**INTL 211. Contemporary World Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. A study of selected literature published in the past 25 years and chosen from a number of different nations and cultures. Crosslisted as: ENGL 211.

**INTL 303. World Regions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of the various regions of the earth, including land forms, climate, resources, peoples, agriculture and urban conditions. Regions to be selected each semester from Anglo-America, Latin America, western Europe, Eastern Europe, the former USSR, Middle East and North Africa, Africa (south of the Sahara), Indian subcontinent, China, Japan, Southeast Asia, and Oceania. May be taken only once for credit. Crosslisted as: URSP 303.

**INTL 306. Introduction to Judaism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A general survey of the dynamics and characteristic patterns of Jewish civilization encompassing history, practices and beliefs. Crosslisted as: RELS 306.

**INTL 307. Black Religion. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An analysis of the role of religion in the lives of blacks with an emphasis on African religions and philosophies, the black church in America, and the roles of the various faiths, sects and cults. Crosslisted as: AFAM 307/RELS 307.

**INTL 309. Global Women's Health. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Explores issues in women's health from a national and international perspective with an emphasis on the experiences of women in the African diaspora. Theories in medical anthropology are employed to examine key themes. Crosslisted as: AFAM 309/ANTH 309/GSW 309.

**INTL 311. Religions of the World. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An investigation of the historical, cultural and theological foundations and development of major world religions including Hinduism, Buddhism, Confucianism, Taoism and Shinto. Crosslisted as: RELS 311.

**INTL 312. Religions of the World. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An investigation of the historical, cultural and theological foundations and development of major world religions including Zoroastrianism, Judaism, Christianity and Islam. Crosslisted as: RELS 312.

**INTL 314. Man and Environment. 3 Hours.**

Semester course. 3 lecture hours. 3 credits. A comparative study of the ecology and natural history of human populations, including the environments as determining factors in the evolution of human institutions and technology, resources management, and population crises; cultural traditions as mechanisms of population control; basic theory of population biology. Crosslisted as: ENVS 314.



**INTL 315. Economic Development. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B and ECON 211; or ECON 210 and ECON 211. Introduction to the process of economic development. Surveys development theory and experiences of underdeveloped countries of Africa, Asia, Latin America and the Caribbean and of developed countries. Explores obstacles to development and policies and tools for stimulating economic development. Crosslisted as: AFAM 315/ECON 315.

**INTL 317. Islam. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the emergence of Islam in Arabia in the seventh century and its subsequent developments, including a look at the Qur'an (the holy book), the Prophetic traditions, the concept of God, as well as mysticism (sufism) and law (shari'ah) and an overview of ritual practices, fundamental beliefs, theological principles and current issues in Islam and international relationship. Crosslisted as: RELS 317.

**INTL 320. International Marketing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Designed to help students develop an understanding of international marketing policies and the differences among foreign marketing environments. Students compare and contrast domestic and international marketing and examine recent changes in the international marketing environment. Crosslisted as: MKTG 320.

**INTL 327. Introduction to Intercultural Communication. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to the basic concepts, principles and skills for improving verbal and nonverbal communication with persons from different cultures. Using a cultural general approach, topics discussed include the concept of culture, barriers to intercultural communication, verbal communication process and nonverbal communication aspects. Appropriate for business and non-business majors. Crosslisted as: MGMT 329.

**INTL 328. Russian Society in Transition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of the instructor. An analysis of Russian culture and social institutions as they are today and in historical perspective. Throughout the course interrelationships among politics, the economy and social life are examined, with particular emphasis on the ideological implications of Russian/Soviet architecture, art and mass media; on environmental issues and health; on social problems and the legal systems; and on gender, the work world and family interaction. Crosslisted as: SOCY 328.

**INTL 329. International Economics. 3 Hours.**

3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B and ECON 211; or ECON 210 and ECON 211. An analysis of economic and political influences on exports and imports, balance of payments, foreign investment, exchange rates and international monetary systems. Crosslisted as: ECON 329.

**INTL 330. Global Societies: Trends and Issues. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL/POLI 105 or POLI 201 or SOCY 101. An analysis of factors that are promoting the globalization of social, economic and political relations, and an inquiry into implications of these developments for individuals, localities, nations and the world community. The course will highlight the impact of culture and ethnicity, historical and emerging patterns of international business activity and their societal significance, divergent strategies for economic and social development in the world's regions, and the effects of population growth and environmental problems on public life within and among nations. Crosslisted as: SOCY 330.

**INTL 331. Survey of Latin American Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 300; SPAN 305 or 307 or 311; corequisite: SPAN 301. Conducted in Spanish. An introduction to major authors and trends up to the present. Crosslisted as: SPAN 331.

**INTL 333. Geography of Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the land forms, climate, peoples, livelihoods, settlement patterns and cultural groupings of sub-Saharan Africa. Crosslisted as: AFAM 333/URSP 333.

**INTL 334. Regional Geography of \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the land forms, climate, resources, peoples, agricultural and urban conditions in a specific region such as North America, Europe, Latin America, the Middle East and India, the USSR and Eastern Europe. See the Schedule of Classes for specific region to be studied each semester. Crosslisted as: URSP 334.

**INTL 340. World Cities Outside of North America. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of urban habitats in a variety of geographical regions with emphasis on their differences and their common experiences. Crosslisted as: URSP 340.

**INTL 341. Global Ethics and the World's Religions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A critical survey of ethical concepts and issues in the thought and practice of major religious traditions. Comparison of ethical perspectives on selected themes and attention to cooperative efforts toward a global ethic. Crosslisted as: RELS 340.

**INTL 345. Great Cities of the World. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course may be repeated under different topics for a total of 6 credits. Prerequisite: sophomore standing or permission of instructor. An interdisciplinary course with a focus on the origin, expansion and significance of one or more cities, the specifics of its/their culture and the role of language. Particular emphasis will be placed on relating the physical, social and economic aspects of the city's growth and development to the cultural expression of urbanism. Crosslisted as: FRLG 345/URSP 350.

**INTL 348. South American Ethnography. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. General ethnographic survey of both highland and lowland indigenous cultures of South America and cultural changes as a result of European contact. Crosslisted as: ANTH 348.

**INTL 349. Rethinking a Continent: Latin America. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. This course surveys contemporary cultures of Latin America. It addresses historical sociocultural developments from an anthropological perspective and introduces concepts from social justice studies, development anthropology and applied anthropology. Crosslisted as: ANTH 349.

**INTL 350. Rethinking a Continent: Europe. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. A survey of historical sociocultural developments from an anthropological perspective with an emphasis on integrative and disintegrative forces that have shaped cultures and identities in Europe. Introduces concepts from sociocultural anthropology, social justice studies and applied anthropology. Crosslisted as: ANTH 350.



**INTL 351. Governments and Politics of the Middle East. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A comparative analysis of political systems in the Middle East including the study of contemporary aspects in the Middle Eastern states. The course will explore the primary bases of cleavage and conflict and the political forces that shape the policies and political dynamics of the region. Crosslisted as: POLI 351.

**INTL 352. European Governments and Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A comparative study of the political systems of selected western and eastern European countries. Crosslisted as: POLI 352.

**INTL 353. Latin American Governments and Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of politics characteristic of Latin American systems, including democratic reformism, military authoritarianism and revolutionary socialism. The course also examines the contemporary problems of fledgling democracies as they cope with economic and debt crises and various opposition challenges. Crosslisted as: POLI 353.

**INTL 354. Russian and Post-Soviet Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the origins, institutions, processes and disintegration of the Soviet political system, and of the ongoing reform efforts during the post-Soviet period. Special emphasis is placed on the politics of the transition to a democratic political system and a market economy. Other topics include nationality issues, social problems and foreign policy. Crosslisted as: POLI 354.

**INTL 355. Asian Government and Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A comparative analysis of the politics and governments of major Asian states, with a focus on Japan, China and India. Crosslisted as: POLI 355.

**INTL 356. Government and Politics of Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course will introduce the student to the basic outlines of government and politics in Africa. The course will consider such topics as colonialism, elitism and nationalism and modernization strategies. Using the comparative approach, the course will primarily focus on West, East and Central Africa. Crosslisted as: POLI 356/AFAM 356.

**INTL 357. Politics of Southern Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of racial and political developments in the southern tip of Africa. While South Africa will be the primary focus of analysis, other countries in the region such as Zimbabwe, Angola and Mozambique will be studied. Crosslisted as: POLI 357/AFAM 357.

**INTL 358. Concepts of Comparative Government. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Comparative study of politics and governments. Introduces concepts and theories used in the study of political systems. Topics include democratization and democratic governance, the role of the state, one-party and military regimes, revolution, and economic and political development. Crosslisted as: POLI 358.

**INTL 360. World Classics of Spirituality. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A critical reading of selected works from among the spiritual classics of Judaism, Christianity, Islam, Hinduism, Taoism and other religious traditions. Crosslisted as: RELS 350.

**INTL 361. Issues in World Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An exploration of several significant issues in world politics. Topics may include peacekeeping and collectiveness, global environmental politics as well as selected others. Topics will vary with current events and trends in the international arena. Crosslisted as: POLI 361.

**INTL 362. International Organizations and Institutions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the background development structure and operations of organizations and institutions such as the United Nations, the European Community and the Organization of American States. Crosslisted as: POLI 362.

**INTL 363. U.S. Foreign Policy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A analytical survey of processes and practices in the formulation of U.S. foreign policy, including an introduction to the goals, problems of implementation and current challenges faced by policy makers. Crosslisted as: POLI 363.

**INTL 364. Vietnam. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An analysis of the complete record of the conflict in Vietnam. The primary focus will be on the period of U.S. involvement. The course will examine closely how and why the United States became involved in Vietnam and what impact the Vietnam War has had on political institutions and behavior. In particular, the course will examine what impact the period of U.S. involvement has had upon U.S. foreign policy. The course also will consider additional topics including: public opinion and the war, the relationship between the president and Congress in light of the war and contemporary U.S. politics as a backlash against the political movements of the 1960s. Crosslisted as: POLI 364.

**INTL 365. International Political Economy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of both theoretical and current policy issues in international political economy. Theories to be covered include liberalism, mercantilism, Marxism, regionalism, world systems theory and others. Policy issues include differing styles of capitalism in the industrialized world, the political economy of development, the politics of international corporate alliances and others. Crosslisted as: POLI 365.

**INTL 366. African Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A survey of the literature of Africa with particular emphases on fiction and on West Africa. Some attention also will be given to orature. Crosslisted as: AFAM 363/ENGL 363.

**INTL 367. Caribbean Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A survey of West Indian writings. Attention will be given to African, European and Amerindian influences, as well as to the emergence of a West Indian literary tradition. Crosslisted as: AFAM 365/ENGL 365.

**INTL 368. Women and Global Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of women and global politics, providing both a feminist re-examination of traditional international-relations theories and a comparative analysis of the political, legal and economic status of the world's women. The impact of women on global political institutions such as the United Nations will be addressed as well as other feminist and grass roots means of taking political action. Crosslisted as: GSWS 366/POLI 366.

**INTL 370. Studies in the Music of the African Continent and Diaspora. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 6 credits. Prerequisite: MHIS 243 or MHIS/AFAM 250. An in-depth examination of selected topics and issues in African-derived musical and cultural traditions. See the Schedule of Classes for specific topics to be offered each semester. Crosslisted as: AFAM 350/MHIS 350.

**INTL 372. Global Women's Spirituality. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Explores the spiritual writings of women in various cultures and religious traditions. Crosslisted as: GSWS 372/RELS 372.

**INTL 381. Modern Identities: Nation Building. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Critically explores how nation building and national identities have developed over the past two centuries among peoples across the globe. Class discussions will examine theoretical perceptions of these processes and focus on how they shaped and shape realities in different times and places. Crosslisted as: ANTH 381.

**INTL 390. Historic and Ethnic Textiles. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FASH 290 or IDES 446 or permission of instructor. An examination of the history of textile design and production around the world. Crosslisted as: FASH 390.

**INTL 391. Topics in Foreign Literature in English Translation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of 12 credits. An in-depth study of selected topics in foreign literature. This course will not satisfy foreign language requirements. No knowledge of a foreign language is required. All work is done in English. Crosslisted as: FLET 391.

**INTL 398. Directed Study Abroad. 8 Hours.**

Semester course; variable hours. 0-8 credits per semester. May be repeated for a maximum of 8 credits with approval of student's major department. Permission of academic adviser required. A course involving travel and/or residence in a foreign country as features of the student's work on a pre-arranged project. Intended primarily for students participating in student exchange programs.

**INTL 409. Modern Islamic Thought and Global Trends. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL/RELS 312 or INTL/RELS 317; UNIV 200 or HONR 200. Introduces students to the integral relationship of Islam to major events of global concern and contextualizes these events into the wider modern and postmodern developments of Islamic thought and its intellectual and ideological self-interrogation. This course will provide students with the opportunity to study both the background of modern Islamic thought and selected contemporary events. Crosslisted as: RELS 409.

**INTL 410. The Chinese Tradition in Philosophy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the development of Confucianism, of alternative ways of thought prior to the fall of the Han Dynasty and of neo-Confucianism. The systems of thought are examined in the light of their social, political and religious impact on China, Korea and Japan. Crosslisted as: PHIL 410/RELS 410.

**INTL 412. Zen Buddhism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of Zen Buddhism, including backgrounds in Indian philosophy and practice, development in China and Korea, and present-day Zen theory and practice in Japan and in Western countries. Crosslisted as: PHIL 412/RELS 412.

**INTL 413. Comparative Financial Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 311. This course is restricted to students who have completed at least 54 credit hours (junior standing). An analysis of the structure and functioning of financial systems in different parts of the world. Emphasis is on the evolution of such systems in relation to the U.S. financial system. Different regions of the world may be studied in different semesters. Crosslisted as: FIRE 413.

**INTL 415. Economic Anthropology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Provides an overview of the anthropological approach to the "economic" in social life. Analyzes the role played by systems of reciprocity and exchange in ethnographic contexts. Concepts employed by anthropologists in the study of traditional subsistence economies are used to examine modern industrialized societies. Crosslisted as: ANTH 415.

**INTL 416. International Financial Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 311. This course is restricted to students who have completed at least 54 credit hours (junior standing). Financial management of business in an international environment. Emphasis on tools and techniques to prepare financial managers of multinational firms to effectively respond to the challenges of the international environment. Crosslisted as: FIRE 316.

**INTL 418. International Management. 3 Hours.**

3 lecture hours. 3 credits. Prerequisite: junior standing. The study of the environment of international business, ethics and social responsibility in international settings, culture and its effect on behavior and management practice, and the strategies and management practices of firms engaged in international activities. Aims to provide students with the knowledge, skills and sensitivities needed to be effective managers in the international business environment. Crosslisted as: MGMT 418.

**INTL 419. Doing Business in Europe. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing and permission of instructor. Designed primarily as a core integrative course for students enrolled in the Certificate in International Management Studies, but other students are welcome. The course has three goals: a) integration of foreign languages, European studies and international management; b) infusion of other business areas relevant to doing business in Europe (such as international marketing, finance law and economics); and c) the development of cultural sensitivity and social responsibility. The course will be organized as a series of seminars with faculty and other speakers from the above disciplines. Crosslisted as: MGMT 419.

**INTL 420. Women of Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103 or AFAM 103. This course looks at the traditional roles of women in African societies and examines how women have coped in different environments. It focuses on the institutionalized aspects of similarities and differences in women's lives in pastoral and horticultural societies and those with mixed economies, and will contrast these with women's roles in large state societies of Africa and in the modern urbanized context. Crosslisted as: AFAM 420/ANTH 420.

**INTL 421. Civilization of Latin America II. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to 6 credits. Prerequisites: completion of 9 credits of Spanish at the 300 level including SPAN 300 or 301. This course explores the cultural diversity of Latin America and the social and political forces behind cultural change. Topics will focus on a specific interdisciplinary theme, such as urban life, the politics of identity and on a specific area of Latin America. See the Schedule of Classes for the specific topic to be offered each semester. Crosslisted as: SPAN 421.

**INTL 425. Religion, Magic and Witchcraft. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. A survey of the nature and variety of beliefs outside of the major streams of religious thought. Among topics considered are myth, totemism, taboo and sorcery. Emphasis on understanding supernatural beliefs and practices in relation to culture and society. Crosslisted as: RELS 425/ANTH 425.

**INTL 441. Islamic Mysticism: the Sufis. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL/RELS 312 or INTL/RELS 317; UNIV 200 or HONR 200. Introduces students to the major Sufi masters and their works. It covers ideological and practical development of Islamic mysticism as compared to the developments within Islam itself. Crosslisted as: RELS 441.

**INTL 446. International Human Resource Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 331, INTL/MGMT 418 or ECON/INTL 329. Covers the application of human resource management activities in an international environment. Similarities and differences in domestic methods are highlighted to aid understanding. Contemporary practices in the selection, development, compensation and maintenance of expatriates, impatriates, repatriates, host country nationals and third-country nationals are studied. Regulatory and cultural dimensions of countries are examined. Crosslisted as: MGMT 446.

**INTL 448. Digital Marketing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MKTG 301 and MKTG 330. This course is restricted to students who have completed at least 54 credit hours (junior standing). Examines Internet marketing as a necessary ingredient to successful worldwide marketing strategy. Students analyze markets using Web-based techniques for market evaluation, competitive analysis, market comparison and selection. Discussion includes comparison of e-business versus traditional business perspectives on marketing strategies and tactics. Crosslisted as: MKTG 448.

**INTL 449. Religion, Globalization and Social Justice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 340/INTL 341, WLRD 210 or WRLD 220; UNIV 200 or HONR 200. Explores the role religions are playing in the work of building a socially just and environmentally sustainable world community. Crosslisted as: RELS 450.

**INTL 450. Francophone Literatures and Cultures. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisite: FREN 301; FREN 305 or 307; FREN 320 or 321 or 330 or 331. Conducted in French. Introduces students to the literatures and cultures of the Francophone world. Provides an overview of the Francophone world and an in-depth study of literary works written in French from Africa, the Caribbean, North America, Asia and Europe. Also explores the impact of Colonial history on Francophone literatures and cultures. See the Schedule of Classes for the specific topic to be offered each semester. Crosslisted as: FREN 450.

**INTL 451. Religion, Racism and Social Justice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 340/INTL 341, WLRD 210 or WRLD 220; UNIV 200 or HONR 200. Explores the complex history and contemporary relationships between religion, racism and social justice. Crosslisted as: RELS 451/AFAM 451.

**INTL 452. The Politics of Developing Areas. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Analysis of the processes of political and economic development. Includes a study of various challenges facing developing countries, such as economic inequalities, environmental degradation, mass political participation, military coups, revolution and civil war. Crosslisted as: POLI 359.

**INTL 453. Western Religions, Women and Social Justice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 or HONR 200; and RELS 108, GSWS 201 or WRLD 210. Explores the experience and portrayal of women in the three Abrahamic traditions: Judaism, Islam and Christianity. Study focuses on how these religions and their texts bear upon the social, economic, political and spiritual lives of women. Special attention is given to the impact of globalization and religious fundamentalism on women. Crosslisted as: RELS 453/GSWS 453.

**INTL 454. Cross-cultural Communication. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of the dynamics of cross-cultural communication which applies linguistic tools to understanding cultural issues and solving communication problems. Crosslisted as: ENGL 454/ANTH 450.

**INTL 455. Anthropology of Development and Globalization. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL 101. May be taken for a maximum of nine credit hours in three different world areas. Consists of a global study of the developing Third World with particular emphasis on rural populations, subsistence farmers, indigenous groups and small entrepreneurs. Focuses on development and globalization while providing insights into the peasantry as a class, women in peasant societies, changes in peasant societies and the peasantry as a player in the policies of the modern state. Crosslisted as: ANTH 455.

**INTL 456. Catholic Ethics and Social Justice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 280 or 380, or RELS/INTL 312, or RELS 340/INTL 341; UNIV 200 or HONR 200. An exploration of the Catholic church's major theological, ethical, constitutional and strategic concerns, and an analysis of Catholic social teaching and its relation to current social issues such as abortion, peace and conflict, poverty, and human rights. Crosslisted as: RELS 455.

**INTL 457. Comparative Perspectives on Cultures and Societies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH/INTL 103; UNIV 200 or HONR 200. Examination of the theoretical, methodological and ethical problems that arise from anthropological comparisons of cultures. Crosslisted as: ANTH 457.

**INTL 468. Comparative National Security Policy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of national security policies and policy-making in a diverse set of nation-states. Emphasis is placed on comparing how threat perception, historical context, ideology, political structure and leadership impact national security policies of both powerful and weak nation-states. Crosslisted as: POLI 368.

**INTL 480. China in Transition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Traces how China is making the transition from a planned to market economy, and what implications this transition has on the political, social and urban landscape. Class discussions are grounded on a basic understanding of China's modern history and regional geography. Crosslisted as: POLI 360.

**INTL 490. Seminar in International Issues. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisite: senior standing in international studies major with a minimum of 85 credits earned toward the degree. An individualized research project focusing on international issues and undertaken in a seminar setting.

**INTL 491. Topics in International Studies. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. An in-depth study of a particular topic in international studies. See the Schedule of Classes for specific topics to be offered each semester.

**INTL 492. Independent Study. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. Maximum total of 4 credits in all independent study courses. Generally open to students of junior and senior standing who have acquired at least 12 credits in international studies courses. Determination of amount of credit and permission of instructor and director must be obtained before registration of the course.

**INTL 493. International Studies Internship. 1-6 Hours.**

Semester course; 50 clock hours in a local, national or international internship placement per credit. Variable credit. 1-6 credits with a maximum of 6 credits. Prerequisites: junior or senior standing, and approval of selection committee or program director. The internship is designed to present opportunities for qualified students to acquire exposure to internationally oriented public and private organizations and agencies. The course includes a rigorous evaluation of the internship experience based on learning objectives stipulated in a contract between the student, faculty adviser and a field supervisor.

**INTL 499. Senior Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisites: completion of 18 INTL credits at the 300- or 400-level; senior standing. Pre- or corequisite: INTL 490, 492, or 493. Focuses on self-assessment, compilation of a portfolio and curriculum vitae, career and graduate school preparation and on the lifelong application of skills and knowledge acquired in the program. Students will critically assess their experience in the international and area studies program.

**Italian (ITAL)****ITAL 101. Elementary Italian. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of ITAL 101 to enroll in ITAL 102. Elementary grammar, reading and oral drill.

**ITAL 102. Elementary Italian. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of ITAL 101 to enroll in ITAL 102. Elementary grammar, reading and oral drill.

**ITAL 201. Intermediate Italian. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ITAL 102. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading and writing skills.

**ITAL 202. Intermediate Italian Readings. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ITAL 201. Designed to increase the student's proficiency in Italian through the study of selected cultural and literary texts.

**ITAL 205. Intermediate Conversation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ITAL 201. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues and free conversation.

**ITAL 300. Advanced Composition and Conversation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ITAL 202 or 205. Development of advanced written and oral skills through both systematic review of Italian grammar with emphasis on the elements of style and vocabulary building, and conversational activities based on a variety of situations. Conducted in Italian.

**ITAL 320. Italian Cinema: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of 6 credits. Prerequisite: ITAL 300. Conducted in Italian. Traces Italian cinema from Neorealism to contemporary cinema, exploring genres such as comedy and Westerns as well as landmark works by the most important directors. See the Schedule of Classes for specific topic to be offered each semester.

**ITAL 330. Themes in Italian Literature: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of 6 credits. Prerequisite: ITAL 300. Conducted in Italian. An in-depth study of selected topics in Italian texts. See the Schedule of Classes for specific topic to be offered each semester.

**ITAL 391. Topics in Italian. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated with different topics for a maximum of 6 credits. Pre- or corequisite: ITAL 320 or ITAL 330. Conducted in Italian. An in-depth study of selected topics in Italian. See the Schedule of Classes for specific topics to be offered each semester.

**Language and Cultural Competence (LGCC)****LGCC 101. Introduction to Language and Culture for Professionals I: \_\_\_\_\_. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for credit with a different language. Designed for anyone concerned about the effectiveness of communicating with diverse linguistic communities. The communication focus includes an introduction to basic structures and target terminology used in the professions. This course cannot be used to fulfill requirements of general education in the college or the foreign language major or minor.

**LGCC 102. Introduction to Language and Culture for Professionals II: \_\_\_\_\_. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for credit with a different language. Prerequisite: LGCC 101 or the equivalent. Designed for anyone concerned about the effectiveness of communicating with diverse linguistic communities. The communication focus includes continued practice with basic structures and target terminology used in the professions. This course cannot be used to fulfill requirements of general education in the college or the foreign language major or minor.



**LGCC 197. Basic Cultural Competence Training. 1-3 Hours.**

Semester course; 1-3 hours. 1-3 credits. Designed for anyone concerned about the effectiveness of people working and living in multicultural societies. Bridges theory and practice through a series of hands-on exercises, simulations, stories and real-world examples to optimize the learners' skill development necessary for effective intercultural communication. Graded as pass/fail.

**LGCC 201. Intermediate Language and Culture for Professionals I: \_\_\_\_.**  
**1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisite: LGCC 102 or the equivalent. Designed for anyone concerned about the effectiveness of communicating at an intermediate level with diverse linguistic communities. Delves further into grammatical structures, cultural concepts and target terminology used in the professions. This course cannot be used to fulfill requirements of general education in the college or the foreign language major or minor.

**LGCC 202. Intermediate Language and Culture for Professionals II: \_\_\_\_.**  
**1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisite: LGCC 201 or the equivalent. Designed for students concerned about the effectiveness of communicating at an advanced intermediate level with diverse linguistic communities. Offers continued instruction in cultural concepts, basic structures and target terminology used in the professions. This course cannot be used to fulfill requirements of general education in the college or the foreign language major or minor.

**LGCC 297. Cultural Competence for Health Care Professionals. 1-3 Hours.**

Semester course; 1-3 hours. 1-3 credits. Designed for health care, social work, public health and related providers who work with the growing number of immigrants, refugees and minorities in the U.S. Focus is on the basics of intercultural-communication competence for health care settings to help health care providers build deeper knowledge and understanding of patients/clients' cultural values and beliefs and how they may influence clients' attitudes and behaviors. Graded as pass/fail.

**LGCC 405. Spanish Language and Culture for Health Care Providers. 2 Hours.**

Continuous courses; 2 lecture hours. 2-2-2 credits. Prerequisite: permission of instructor. Completion of LGCC 405 to enroll in LGCC 406. Completion of LGCC 406 to enroll in LGCC 407. Open only to students enrolled in health care programs such as nursing, medicine, allied health, pharmacy, dentistry, or health care practitioners. A survey of the changing demographics of patients in health care and the language and cultural skills required to provide adequate health care services. The communication focus includes basic structures and medical terminology used during assessments and phrases commonly used during physical examinations. These courses cannot be used to fulfill requirements for the Spanish major or minor, nor can they fulfill the general education language requirement.

**LGCC 406. Spanish Language and Culture for Health Care Providers. 2 Hours.**

Continuous courses; 2 lecture hours. 2-2-2 credits. Prerequisite: permission of instructor. Completion of LGCC 405 to enroll in LGCC 406. Completion of LGCC 406 to enroll in LGCC 407. Open only to students enrolled in health care programs such as nursing, medicine, allied health, pharmacy, dentistry, or health care practitioners. A survey of the changing demographics of patients in health care and the language and cultural skills required to provide adequate health care services. The communication focus includes basic structures and medical terminology used during assessments and phrases commonly used during physical examinations. These courses cannot be used to fulfill requirements for the Spanish major or minor, nor can they fulfill the general education language requirement.

**LGCC 407. Spanish Language and Culture for Health Care Providers. 2 Hours.**

Continuous courses; 2 lecture hours. 2-2-2 credits. Prerequisite: permission of instructor. Completion of LGCC 405 to enroll in LGCC 406. Completion of LGCC 406 to enroll in LGCC 407. Open only to students enrolled in health care programs such as nursing, medicine, allied health, pharmacy, dentistry, or health care practitioners. A survey of the changing demographics of patients in health care and the language and cultural skills required to provide adequate health care services. The communication focus includes basic structures and medical terminology used during assessments and phrases commonly used during physical examinations. These courses cannot be used to fulfill requirements for the Spanish major or minor, nor can they fulfill the general education language requirement.

**Language Skills (LASK)****LASK 103. Introduction to Languages. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A course designed to help students understand how languages function through a survey and contrastive analysis of language systems, with attention to the sociocultural, psychological and historical aspects of languages. Completion of this course does not qualify a student to take the 200 level of a language without passing a language placement test. Crosslisted as: LING 103.

**LASK 203. Classical Elements in the English Language. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Development of English vocabulary through a study of Greek and Latin elements in English: derivatives, roots and loan words. Some emphasis on the special vocabularies of the sciences.

**Latin (LATN)****LATN 101. Elementary Latin. 4 Hours.**

Continuous courses; 4 lecture hours. 4-4 credits. Prerequisite: completion of LATN 101 to enroll in LATN 102. First semester: a study of the Latin language with emphasis on the Latin elements found in English. Latin vocabulary. Second semester: introduction to Latin authors and related aspects of Roman civilization.

**LATN 102. Elementary Latin. 4 Hours.**

Continuous courses; 4 lecture hours. 4-4 credits. Prerequisite: completion of LATN 101 to enroll in LATN 102. First semester: a study of the Latin language with emphasis on the Latin elements found in English. Latin vocabulary. Second semester: introduction to Latin authors and related aspects of Roman civilization.



**LATN 201. Readings in Latin Literature. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisites: LATN 102. Completion of LATN 201 to enroll in LATN 202. Brief grammar review with a parallel study of political and literary trends and developments as found in several of the major Latin writers. First semester: prose, with emphasis on Cicero, Pliny the Younger and Sallust. Second semester: poetry, with selected readings from Catullus, Tibullus, Ovid and Vergil.

**LATN 202. Readings in Latin Literature. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisites: LATN 102. Completion of LATN 201 to enroll in LATN 202. Brief grammar review with a parallel study of political and literary trends and developments as found in several of the major Latin writers. First semester: prose, with emphasis on Cicero, Pliny the Younger and Sallust. Second semester: poetry, with selected readings from Catullus, Tibullus, Ovid and Vergil.

**LATN 330. Themes in Latin Literature: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of 6 credits. Prerequisites: LATN 202. An in-depth study of selected topics such as science and medicine, law, or satire in works by authors such as Caesar, Cicero, Horace, Catullus, Ovid, Virgil, Marcus Aurelius and Lucretius. See the Schedule of Classes for specific topic to be offered each semester. Texts are in the original language.

**LATN 331. Representative Authors in Latin Literature: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of 6 credits. Prerequisites: LATN 202. Selected readings by authors from the Archaic Period, the Classical Age, Silver Age and Patristic Latin with a focus on their impact on the political and social agendas of the day and on us today. See the Schedule of Classes for specific topic to be offered each semester. Texts are in the original language.

**Linguistics (LING)****LING 103. Introduction to Languages. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A course designed to help students understand how languages function through a survey and contrastive analysis of language systems, with attention to the sociocultural, psychological and historical aspects of languages. Completion of this course does not qualify a student to take the 200 level of a language without passing a language placement test. Crosslisted as: LASK 103.

**LING 390. Introduction to Linguistics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. An introduction to methods of language analysis, emphasizing the study of sounds and sound patterns and units of meaning and their arrangements. Crosslisted as: ENGL 390/ANTH 390.

**LING 392. Language, Culture and Cognition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 220 or 230. Introduces theoretical and methodological foundations for the study of language from sociocultural perspectives. The perspectives include linguistic, philosophical, psychological, sociological and anthropological contributions to the understanding of verbal and nonverbal communication as a social activity embedded in cultural contexts. No prior training in linguistics is presupposed. Crosslisted as: ANTH 328/ENGL 392/FRLG 328.

**LING 401. Comparative Structures. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: SPAN 301; SPAN 305 or 307 or 311; SPAN 320 or 321 or 330 or 331. Conducted in Spanish. A comparison of English and Spanish, with emphasis on pronunciation and problems encountered in the teaching of Spanish. See the Schedule of Classes for the specific topic to be offered each semester. Crosslisted as: SPAN 401.

**LING 402. Language Issues in the Spanish-speaking World. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: SPAN 301; SPAN 305 or 307 or 311; SPAN 320 or 321 or 330 or 331. Conducted in Spanish. Through a variety of topics this course explores the links between language and human behavior as exemplified by language phenomena in the Spanish-speaking world. Topics will be drawn mainly from sociolinguistics, language and culture, and education and applied linguistics. See the Schedule of Classes for the specific topic to be offered each semester. Crosslisted as: SPAN 402.

**LING 450. Modern Grammar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. Study of modern English grammar and usage with some attention to linguistic theory. Recommended for teachers at all levels. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. For English majors, these courses (limit of six credits) may be counted as part of graduate or undergraduate degree, but not both. Crosslisted as: ENGL 450.

**LING 451. History of the English Language. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. The historical development of the English language; etymology, morphology, orthography and semantics. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. For English majors, these courses (limit of six credits) may be counted as part of graduate or undergraduate degree, but not both. Crosslisted as: ENGL 451.

**LING 452. Language and Gender. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of relationships between gender and language by focusing on such issues as differences between the ways women and men use language, relationships between language and power and ways in which language reflects and reinforces cultural attitudes toward gender. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. Crosslisted as: GSWS 452/ENGL 452.

**LING 453. Modern Rhetoric. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 or HONR 200, and ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. A study of a broad range of modern rhetorical theories, emphasizing their possible relationships with linguistics, literary criticism, civic engagement and the process of writing. Crosslisted as: ENGL 453.

**LING 455. Language, Culture and Cognition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: three credits in a 200-level literature course (or equivalent). Introduces theoretical and methodological foundations for the study of language from socio-cultural perspectives. The perspectives include linguistic, philosophical, psychological, sociological and anthropological contributions to the understanding of verbal and nonverbal communication as a social activity embedded in cultural contexts. No prior training in linguistics is presupposed. Crosslisted as: ANTH 448/ENGL 455/FRLG 448.

## Mass Communications (MASC)

### MASC 101. Mass Communications. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Open only to mass communications majors or media studies minors, or by permission of School of Mass Communications. A comprehensive overview of mass media which examines its history and evolution. Emphasis is given to the ways in which communications technologies have shaped and are shaped by society. Considers how digital and earlier technologies have led to increasing integration of world cultures and economies. Includes discussion of mass media law and ethics, including the origins and evolution of a free press and the legal framework of contemporary mass media practice.

### MASC 151. Global Communications. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores how communication media and globalization drive each other and how they both impact the nation-state as well as international institutions. Examines how technology, the global economy and international media corporations influence culture, politics, business, law and other institutions in countries around the world. Explores the relationship between media systems and governments and how both are affected by technology and globalization. Crosslisted as: INTL 151.

### MASC 201. Curiousness. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Study and practice of the first attribute for success in creativity: curiosity. Students engage in practical applications, readings, lectures, demonstrations and in-class exercises that build curiosity and help students identify and trust their natural curious nature. Provides advertising and non-advertising majors with rigorous and provocative challenges to stimulate further interest in creating for media.

### MASC 203. Journalism Writing. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 101 minimum grade of C, UNIV 112 or both ENGL 295 and HONR 200 with minimum grade(s) of C, and minimum cumulative GPA of 2.5. Study and practice in fact gathering and development of basic writing skills for print, broadcast and online journalism. Focuses on journalistic storytelling, grammar, Associated Press style and knowledge of current affairs.

### MASC 204. Story. 3 Hours.

Semester course; 1 lecture and 4 laboratory hours. 3 credits. Prerequisites: MASC 101 minimum grade of C and 201 minimum grade of C, UNIV 112 or both ENGL 295 and HONR 200 with minimum grade(s) of C, and minimum cumulative GPA of 2.5. Focuses on writing for advertising and consumer communications (the best advertising tells stories to which consumers can relate). Students study the parts of a story, what makes a story interesting and how to find those things. Practice includes looking for, finding and constructing a story. A survey of many different ways storytelling is involved in making advertising. Practice in applying storytelling skills to several advertising and communication projects.

### MASC 210. Public Relations. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduction to public relations principles and practices, including analysis of tools, media, ethical responsibilities and emerging technologies. Special attention to the theory and research literature on rational and ethical persuasion.

### MASC 290. Ethical Problems in Mass Media. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 101 minimum grade of C. Examination and analysis of contemporary issues and problems in conventional and new media. The philosophical foundation and principles of ethical decision-making are explored. Critical and unresolved issues are discussed within the legal and ethical framework of modern mass media practice. Students are required to design and justify resolutions to the issues and present defenses for the resolution proposals.

### MASC 291. Topics in Communications. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated once with different content. A study of a specialized topic in mass communications. See the Schedule of Classes for specific topics to be offered.

### MASC 300. Technical Prowess. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 204 minimum grade of C. For advertising students only. Examines the functions of visual and graphic communication in the print and electronic media. Focuses on mastery of graphics software and basic design principles used in advertising. Students gain hands-on experience with state-of-the-art computer graphics and layout programs. (May not be taken if student has taken MASC 301 or 334.)

### MASC 301. Graphics for Journalism. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 203 with a minimum grade of C. For journalism students only. Examines the functions of visual and graphic communication in the print and electronic media. Focuses on creative typographic and layout design principles and integrates practice in editing, graphic creation, digital-image manipulation and professional publishing. Students gain hands-on experience with state-of-the-art computer graphics and layout programs used in newspaper and magazine journalism. (May not be taken if student has taken MASC 300 or 334.)

### MASC 303. Reporting for Print and Web. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 203 minimum grade of C and UNIV 200 minimum grade of C or HONR 200 minimum grade of C. Detailed study in reporting and writing news stories for print publications and websites. Focus on interviewing, writing news and features and preparing for entry-level reporting assignments. Students also will learn online presentation skills, including photos, audio, video and interactive elements.

### MASC 305. Copy Editing. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 301 minimum grade of C. Instruction and practice in basic newspaper and online editing with a focus on practical experience in editing local and news service copy for publication. Includes emphasis on headline writing, development of news judgment, accuracy and fairness, and potential legal problems for copy editors. Attention also will be paid to layout and design for newspapers and online.

**MASC 333. Public Relations Writing and Media Relations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 203 and 210, each with a minimum grade of C. Enrollment restricted to public relations students only. An intensive writing course focusing on researching and writing materials in support of the public relations function. Practice in preparing various collateral including news releases and advisories, story pitches, special events background materials, media kits, employee newsletters, community relations materials and formal public speaking scripts. Explains the role and function of the news media and the unwritten rules that govern interaction with the news media. Students will learn how to construct an effective media relations strategy, how to be interviewed with skill and assurance and how to evaluate media relations within the organization's public relations plan.

**MASC 334. Public Relations Graphics and Production I. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 210 with a minimum grade of C. Enrollment restricted to public relations students or media studies minors only. Study of the functions of visual and graphic communication for public relations practice. Focuses on basic design principles and skills in editing, graphic creation, digital-image manipulation, Web and interactive content. Students gain hands-on experience with state-of-the-art computer graphics and layout programs. (May not be taken if student has completed MASC 300 or 301.).

**MASC 335. Public Relations Graphics and Production II. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 334 with a minimum grade of C. Enrollment restricted to public relations students only. Continues development of visual and graphic communication skills acquired in MASC 334. Introduces development of additional multimedia skills to include photography, electronic newsletters and video storytelling. (May not be taken if student has completed MASC 300 or 301.).

**MASC 336. Social Media in Public Relations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 210 with a minimum grade of C. Enrollment restricted to public relations students only. Covers development, trends and application of social media. Focuses on social media as a strategic tool for public relations professionals. Identifies and analyzes functionality and best practices, including audience engagement, benchmarking and appropriate metrics for social media monitoring, measurement and evaluation.

**MASC 337. Public Relations Management and Case Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 210 with a minimum grade of C. For public relations students only. Through intensive review, study and discussion of public relations case studies, students will use and further develop their critical-thinking abilities to analyze how the public relations function was managed to serve organizational goals. Students will critique existing case studies as well as develop their own individual case studies.

**MASC 338. Professionalism in Public Relations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 210 with a minimum grade of C. Enrollment restricted to public relations students only. Study of public relations careers, including in-depth examination of types of practice and industry choices for professionals. Includes development of job-seeking skills such as networking, resume and cover letter writing, interviewing, as well as professional skills such as impromptu and extemporaneous speaking, presentation development and effective meeting management. Focus on ethical practice and understanding of effective long-term professional development activities such as the Accredited in Public Relations and Accredited Business Communicator credentials.

**MASC 341. Feature and Article Writing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 303 minimum grade of C or 363 minimum grade of C. Practice in preparing articles and features for newspapers and magazines. Emphasis is on creative journalistic writing and development of writing skills.

**MASC 359. International Media Coverage: The Middle East. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 101 with a minimum grade of C or 151 with a minimum grade of C. This interdisciplinary course explores the media's role in covering cultural, political, religious and other issues in the Middle East. Students will examine the role and impact of the media in both the United States and Middle East in shaping global and regional public opinion. Using webcam and online technology, VCU students will discuss cross-cultural perspectives with students from the other U.S. universities and universities in the Middle East. Crosslisted as: WRLD 359.

**MASC 361. History and Development of Journalism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 203 or 204 with a minimum grade of C. An examination of the regulatory, technical, economic and creative foundations of print, broadcast and Web-based journalism. Historical, contemporary and ethical issues are also addressed.

**MASC 363. Introduction to Broadcast Writing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 203 with a minimum grade of C. Corequisite: MASC 367. Students will concentrate on developing news writing and reporting skills for television and radio. Course work will include weekly writing assignments and the production of broadcast-quality radio and television stories. Knowledge of current events is essential.

**MASC 367. Audio and Video Journalism. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 203 with a minimum grade of C. Corequisite: MASC 363. Open to mass communications majors only. Focuses on the purpose, function and execution of basic techniques of audio and video field and studio production operations, especially as they relate to news. Emphasizes the production of broadcast-quality media content. Fieldwork production, remote production and live production, along with audio and video recording and editing, are covered.

**MASC 380. History of Advertising. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 203 or 204 with a minimum grade of C. A foundation survey, from prehistoric to present day. What is advertising? How did it get to be that way and what might it become? Advertising's place in society through several eras, with emphasis on U.S. advertising history, but attention also paid to the role of advertising in other countries. An overview of the creation of the ad agency, a summary of its parts, an explanation of its workings and its place in society. Understanding advertising as practiced from various viewpoints including the agency, public, clients and social and political groups.

**MASC 381. Great Advertising. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 380 minimum grade of C. Explores the practitioner-oriented approach to the creation, preparation and evaluation of advertising, branding and communications. Views great advertising from the perspective of integrated marketing communication and utilizes case studies of advertising and branding campaigns for some of the world's best-known brands.

**MASC 382. Acumen. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 380 minimum grade of C. Focuses on excelling in the business aspects of advertising, branding and communications. To understand an advertising client's business needs, one must understand how the client does business. Students will learn about advertising from within the context of marketing, business and commerce.

**MASC 392. Perspicuousness. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 204 with a minimum grade of C and UNIV 200 or HONR 200 with a minimum grade of C. Intensive practice in choosing the right word for the right occasion. Study of the different types of advertising copy used by both local and national advertisers. Focuses on creative thinking and inspired writing for advertising, branding and communications.

**MASC 393. Creativity for Television. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 380 minimum grade of C. For mass communications majors only. Learn the process of developing professional-level television advertising with a concentration in creative thinking and solutions. Students create TV commercials with attention to scripts, storyboards, talent, visual composition, editing, music, sound effects and direction.

**MASC 394. Imagination. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 300 with a minimum grade of C. Study of art direction: practice in visualizing and utilizing media space aesthetically. Students complete assignments each week, ranging from traditional advertising to alternative media venues. Results are presented in front of the class for critique by faculty and fellow students.

**MASC 397. Ubiquity. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 204 minimum grade of C. Using media to help achieve the client's ad objective. An intensive problem-based course on using mass, personal and social media to engage the consumer, to help communicate the brand's message and to add impact to a communications campaign. Students will study media planning and buying of all types of media (TV, radio, newspapers, magazines, outdoor, online and nontraditional).

**MASC 398. Awareness. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 204 with a minimum grade of C. Understanding what advertisers can look for in their research and how they use research to connect with consumers. Through this intensive research practicum focused on account planning, students will learn to research consumers, competition and brands. Students will use quantitative (such as online surveys) and qualitative (such as focus groups, panel studies, one-on-one interviews) methods to research consumers and target audiences. Students will conduct competitive market research on brands.

**MASC 399. Empathy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 204 with a minimum grade of C. Focuses on managing client accounts, team management, group dynamics, negotiating and presentation skills. Students learn how to persuade through understanding of others, including how to make smarter decisions, spark innovation and solve problems more quickly, and how to create a culture of candor, trust, resilience and accountability in clients and in coworkers.

**MASC 403. Advanced Reporting. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 303 minimum grade of C. For mass communications majors only. Capstone course for journalism/print-online concentration. Intensive study of the techniques of reporting meetings and news of public affairs. Attention will be paid to covering governmental agencies at all levels. Instruction in newspaper editing included. Quality of writing will be a paramount and continual consideration. Emphasis on fast-paced deadlines. This course may not be taken simultaneously with MASC 404, MASC 475 or MASC 496 without permission from the instructor.

**MASC 404. Specialized Project Reporting. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 303 with a minimum grade of C. For mass communications majors only. Capstone course for journalism/print-online concentration. Provides news beat experience for students reporting on complex issues facing the public in the urban community. Emphasis also on editing, team reporting, in-depth research and interviewing techniques, and use of public records. This course may not be taken simultaneously with MASC 403, MASC 475 or MASC 496 without permission from the instructor.

**MASC 408. Communications Ethics and Law. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 203 or 204 with a minimum grade of C. Study of ethical and legal issues affecting the practice of journalism and public relations. Examination and analysis of contemporary issues and problems in conventional and new media. The philosophical foundation and principles of ethical decision-making are explored. Critical and unresolved issues are discussed within the legal and ethical framework of modern mass media practice.

**MASC 409. Truth and Honor. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 204 minimum grade of C and 380 minimum grade of C. For mass communications majors only. A survey of laws pertaining to the creation of advertising, such as trademark and copyright, and to the effects of advertising in the culture. A discussion of ethical questions pertaining to persuasion, communication and the effects of advertising in the culture.

**MASC 415. Advanced Video Journalism. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 363 and 367, both with minimum grades of C. Corequisite: MASC 460. Students learn advanced field shooting and editing techniques as well as the inner workings of the television studio, including studio camera operation, advanced audio and video editing, visual storytelling, and advanced camera techniques.

**MASC 423. Tourism and Hospitality Public Relations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 210 with a minimum grade of C. Enrollment restricted to public relations students only. Examines the role and practice of public relations in the tourism and hospitality industries. Students will learn how to use public relations strategies and tactics to stimulate interest among travelers in destinations and specific activities. Emphasis on media relations, special events, sponsorships/partnerships and social media.

**MASC 424. Sports and Entertainment Public Relations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 210 with a minimum grade of C. Enrollment restricted to public relations students only. Examines the role and practice of public relations in the sports and entertainment industries. Students will learn the role of public relations in managing relationships with the news media, fans and fan groups, and other key audiences. Focus on media relations, social media, sponsorships/partnerships, promotions and community relations.



**MASC 425. Public Relations Research. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 323 with a minimum grade of C. For mass communications majors only. An introduction to the role of research in public relations, with primary emphasis on content analysis, focus group, survey and communication audit methods and the evaluation of quantitative research data.

**MASC 433. Special Events. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 210 with a minimum grade of C. For Enrollment restricted to public relations students only. Students learn the theory and organizational strategies of special events as a function of public relations. Topics include client consulting, objective setting, budgeting, sponsorships, vendor negotiations and follow-up procedures.

**MASC 435. Crisis Communication. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 210 with a minimum grade of C. Enrollment restricted to public relations students only. Students learn techniques for dealing with sudden and unexpected situations that have a negative impact on organizations and their images to key constituencies. Through case studies and crisis simulation exercises, students develop strategic solutions for crisis situations. Students are provided with the insights, confidence and practical expertise needed to manage the consequences of a wide range of possible crises in ways that maintain, or even enhance, their employer's reputation.

**MASC 438. Organizational Communications. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 425 with a minimum grade of C. Enrollment restricted to public relations students only. Focuses on the tools to communicate with employees, volunteers and special organizational internal publics, and how those internal messages are used to achieve the goals and objectives of organizations. Students learn the theories of organizational communication and the techniques used to conduct an internal audit of the communication climate in an organization.

**MASC 439. Public Relations Campaigns. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 333, 335, 336, 337 and 425, each with a minimum grade of C. For Enrollment restricted to public relations students only. Application of public relations theory and methods in the preparation of a plan for a public relations campaign. Special attention to the planning process including issues analysis, and application of public relations and research methods.

**MASC 450. Style. 3 Hours.**

Semester course; 3 lecture hours. 3-3 credits. Prerequisites: MASC 392 and 394, both with a minimum grade of C. For mass communications majors only. An advanced, intensive study of advertising style, forming one's own sense of style and the creative process. Emphasizing strategic and creative development of advertising campaigns. Students will conceptualize advertising campaigns, execute digitally produced, comprehensive advertisements and campaign materials, and assemble a final portfolio. Culminates in a formal portfolio review with professionals from the advertising industry.

**MASC 451. Invention. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 450 with a minimum grade of C. For mass communications majors only. An advanced, intensive study of inventiveness in the creative process. Emphasis on strategic and creative development of advertising campaigns that builds on what students learned about advertising style in MASC 450. Prepares students for post-graduate work or study. Students will conceptualize and produce advertising campaigns and assemble a final portfolio. Culminates in a formal portfolio review with professionals from the advertising industry.

**MASC 459. Judgment. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 398 and 399 and 6 additional credits of MASC electives, all with minimum grades of C. For mass communications majors only. Application and demonstration of inspiration, innovation, advertising knowledge and skills. Designed to help students in the strategic concentration compile a strong, comprehensive body of work used in brand communications. Students will develop competence in evaluating communication concepts, market situations and client and agency concerns.

**MASC 460. Advanced Television Newsgathering. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 363 and 367, both with minimum grade of C. Corequisite: MASC 415. Television news practicum. Using the university and the city of Richmond as their classroom, students will report, write and produce television and multimedia news stories. Electronic newsgathering and editing equipment will be utilized to create professional-caliber projects.

**MASC 461. The Documentary. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 303, 415 and 460, each with minimum grade of C. An examination of documentary concepts through analysis of radio, television and film documentaries. The course will center on the development, writing and production of a documentary in the medium (audio or video) of the student's choice.

**MASC 462. Photojournalism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 363 minimum grade of C and 367 minimum grade of C. Examination of theoretical, technical and practical use of photography in communications and reporting, along with theories and legal guidelines of photojournalism. Training in news photography (both still and video) and its application in converged media. Students must have their own manually operable 35 mm film or digital (minimum 3.2 megapixels) single lens reflex cameras with at least a 50 mm lens or a zoom lens capable of 50 mm shooting. Students will use departmental video cameras.

**MASC 463. Advanced Radio Newsgathering. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 363 minimum grade of C and 367 minimum grade of C. Radio practicum. Using the university and city of Richmond as their classroom, students will report, write and produce radio news stories. Studio and remote equipment will be utilized to create professional-caliber projects.

**MASC 465. Newscasting. 3 Hours.**

Semester course; 1 lecture and 4 laboratory hours. 3 credits. May be repeated once for a total of 6 credits. Prerequisites: MASC 303, 415 and 460, each with minimum grade of C. Concentrates on developing on-air skills in radio and television studio and field situations. Emphasizes journalistic principles in delivery of news, public affairs, editorial and interviews. Stresses grammar, diction and broadcast writing.



**MASC 466. Television Studio Production. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. May be repeated for up to 3 credits. Prerequisite: MASC 203 or 204 with minimum grade of C. Instruction and practice in basic television or studio production. Supports the production of the television broadcast journalism programming created by students within the broadcast journalism concentration.

**MASC 467. Nonprofit Project Development. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 210 with a minimum grade of C or MASC 380 with a minimum grade of C. Students will be selected to work with area nonprofit clients to create and produce a wide variety of advertising and promotional materials. Students will develop strategy, write creative briefs, recruit teams to work with them during CreateAthon onCampus (a 24-hour creative event held during Spring Break), present work to clients and follow any deliverables through production. Strong emphasis on leadership and a commitment to working with nonprofits.

**MASC 474. Diversity in the Media. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 101 with a minimum grade of C. Enrollment restricted to mass communications majors and media studies minors only. Examines historical and contemporary issues associated with the presence and portrayal of selected groups in/by the media in the United States. Examines groups based on race, ethnicity, national origin, gender, sexual orientation, disability, religion and other characteristics. Issues related to diversity and diversity awareness in advertising, journalism and public relations are also explored.

**MASC 475. Capital News Service. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 303 minimum grade of C. For mass communications majors only. Capstone course for journalism/print-online concentration. Advanced journalism students cover state government and politics, including the Virginia General Assembly, the governor, regulatory agencies and elections. Students produce content for publication by newspapers and other news outlets and for social media. Strong emphasis on fast-paced deadlines. This course may not be taken simultaneously with MASC 403, MASC 404 or MASC 496 without permission from the instructor.

**MASC 480. Touch. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 398 minimum grade of C and 399 minimum grade of C. For mass communications majors only. Designing advertising strategies that touch the target audience and engage them in the brand. Students learn to understand the research, the consumer, the competition and the client's brand so that they can develop a strong communication strategy. This is an advanced study of the strategic side of advertising.

**MASC 481. Completeness. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: creative advertising concentration: MASC 392 and 394, both with minimum grade of C; strategic advertising concentration: MASC 398 and 399, both with minimum grade of C. For mass communications majors only. Intensive study in the planning and preparation of advertising campaigns. Students develop complete advertising plans including research, media and creative strategies, sales promotion plans and merchandising plans.

**MASC 485. Web Site Design. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 300, 301 or 334 with a minimum grade of C. Students will receive an introduction to the processes, principles and tools of website design, development and production. The course will focus on the development of strong interactive interfaces, animation, graphic images, text, and functional site design and organization. In this hands-on, computer-based course, students will design and develop a comprehensive site and launch it to the Internet. Increasing the students' knowledge of design principles and technical skills with Web development tools will be emphasized.

**MASC 488. Strategic Communication of Health and Medical Issues. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 425 with a minimum grade of C. Enrollment restricted to public relations students only. Students will discuss the role of media and strategic communication in publics' information-seeking behaviors and formation of attitudes, beliefs and behaviors about health and medical issues. Closes the gap of health information disparity and enhances the communication practice of health-related organizations. Topics examined include thorough case analyses, primary and secondary research and strategic health communication design projects. The principles of strategic communication are applied to areas such as health care public relations, health audience segmentation and messaging tailored for different media forms.

**MASC 491. Topics in Communications. 1-3 Hours.**

Semester course; variable hours. 1, 2 or 3 credits per semester. May be repeated with different topics for a maximum of 9 credits. Prerequisite: MASC 203 or 204, either with a minimum grade of C. An intensive study of a specialized field of mass communications.

**MASC 492. Independent Study. 1-3 Hours.**

Semester course; variable hours. Variable credit. Maximum of 3 credits per semester; maximum total of 6 credits for all independent study courses. Prerequisite: MASC 203 or 204 with a minimum grade of C. The course is designed for students who wish to study subject matter not offered elsewhere in the mass communications' curriculum.

**MASC 493. Fieldwork/Internship. 1-3 Hours.**

Semester course; variable hours. 1, 2 or 3 credits per semester. May be repeated with different topics; maximum total of 6 credits may be applied toward graduation. Prerequisites: MASC 203 or 204, either with a minimum grade of C, and permission of internship coordinator. Selected students will receive on-the-job training under the supervision of an instructor and the employer. Internships are available in newspapers, magazines, public relations, advertising, radio and television.

**MASC 496. Mobile and Social Media Journalism. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 303, 363 and 367, each with minimum grade of C. Capstone course for print-online journalism students. Integrates journalism skills and concepts from previous writing and reporting classes and adapts them to mobile and social media. Students work in a newsroom environment to utilize mobile devices and social media platforms to identify compelling story ideas, effectively break news and report on important news events and issues while applying theories and concepts of online social networking to journalism. Students develop their own professional social media portfolios and build online communities. This course may not be taken simultaneously with MASC 403, MASC 404 or MASC 475 without permission from the instructor.

## Mathematics (MATH)

### **MATH 001. Elementary Algebra. 0 Hours.**

Semester course; 3 lecture or 3 laboratory/tutorial hours. No credit. Prerequisite: permission of the department chair. The purpose of this course is to provide laboratory and tutorial instruction for those seeking remediation or review of high school algebra. Topics include basic properties of real numbers, operations with algebraic expressions, solution of equations and inequalities, exponents and radicals, introduction to functions and graphing.

### **MATH 121. Perspective Geometry. 1 Hour.**

Short course (5 weeks); 3 lecture hours. 1 credit. Students will examine ways in which Renaissance artists who developed linear perspective in geometry in order to paint scenes realistically influenced the development of mathematics and geometry. Topics covered will include the foundations of projective geometry. Pascal's mystic hexagram, Brianchon's Theorem and duality. A need for higher mathematics will also be introduced and explained. MATH 121-122-123 fulfills the math requirement for art students. The sequence can be taken in any order.

### **MATH 122. Tessellations. 1 Hour.**

Short course (5 weeks); 3 lecture hours. 1 credit. Students will examine ways in which mathematics is rooted in both natural philosophy and art by examining tiling theory. Course topics include Penrose tilings, symmetries and various other tessellations. MATH 121-122-123 fulfills the math requirement for art students. The sequence can be taken in any order.

### **MATH 123. Visualization. 1 Hour.**

Short course (5 weeks); 3 lecture hours. 1 credit. Students will examine ways in which mathematics has been visualized artistically and will develop their own way to express a mathematical idea. Topics covered will include fractals, knots, minimal surfaces, non-Euclidean geometry and the fourth dimension. MATH 121-122-123 fulfills the math requirement for art students. The sequence can be taken in any order.

### **MATH 131. Introduction to Contemporary Mathematics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case where the stated alternative prerequisite course has been completed at VCU. Topics include optimization problems, data handling, growth and symmetry, and mathematics with applications in areas of social choice. Major emphasis is on the process of taking a real-world situation, converting the situation to an abstract modeling problem, solving the problem and applying what is learned to the original situation. Does not serve as a prerequisite for MATH 151 or other advanced mathematical sciences courses.

### **MATH 141. Algebra with Applications. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: one year of high school algebra and satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case where the stated alternative prerequisite course has been completed at VCU. Topics include sets, functions, exponents, logarithms, matrix algebra, systems of linear equations, inequalities, binomial theorems, sequences, series, complex numbers and linear programming.

### **MATH 151. Precalculus Mathematics. 4 Hours.**

Semester course; 3 lecture and 1 mathematics laboratory/recitation hours. 4 credits. Prerequisite: MATH 141 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case where the stated alternative prerequisite course has been completed at VCU. Concepts and applications of algebra and trigonometry. Topics include graphics, transformations and inverses of functions; linear, exponential, logarithmic, power, polynomial, rational and trigonometric functions.

### **MATH 191. Topics in Mathematics. 1-3 Hours.**

Semester course; 1-3 credits. May be repeated for credit. A study of selected topics in mathematics. For a course to meet the general education requirements it must be stated in the Schedule of Classes. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

### **MATH 200. Calculus with Analytic Geometry. 4 Hours.**

Continuous courses; 4 lecture hours. 4-4 credits. Prerequisite for MATH 200: MATH 151 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Prerequisite for MATH 201: completion of MATH 200. Limits, continuity, derivatives, differentials, antiderivatives and definite integrals. Applications of differentiation and integration. Selected topics in analytic geometry. Infinite series.

### **MATH 201. Calculus with Analytic Geometry. 4 Hours.**

Continuous courses; 4 lecture hours. 4-4 credits. Prerequisite for MATH 200: MATH 151 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Prerequisite for MATH 201: completion of MATH 200. Limits, continuity, derivatives, differentials, antiderivatives and definite integrals. Applications of differentiation and integration. Selected topics in analytic geometry. Infinite series.

### **MATH 211. Mathematical Structures. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: calculus-level placement on the VCU Mathematics Placement Test within the one-year period immediately preceding enrollment in the course or MATH 151, MATH 200, MATH 201 or MGMT 212. An alternative prerequisite course may be approved at the discretion of the academic adviser. An introduction to mathematical logic and set theory, including applications in Boolean algebras and graph theory.

### **MATH 230. Mathematics in Civilization. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. For Honors College students only. The growth, development and far-reaching applications of trigonometry, navigation, cartography, logarithms and algebra through ancient, medieval, post-Renaissance and modern times are explored. Will include methods to solve mathematical problems using various historical procedures and will involve collaboration through group projects.

### **MATH 255. Introduction to Computational Mathematics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201. (A core course for mathematics/applied mathematics majors.) An introduction to computer algebra systems (CAS) and their use in mathematical, scientific and engineering investigations/computations. Introductory mathematical computer programming using a CAS, including implementation of problem-specific algorithms.

### **MATH 291. Topics in Mathematics. 1-3 Hours.**

Semester course; 1-3 credits. May be repeated for credit. A study of selected topics in mathematics. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**MATH 300. Introduction to Mathematical Reasoning. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201. (A core course for mathematics/applied mathematics majors.) An introduction to basic concepts of mathematical reasoning and the writing of proofs in an elementary setting. Direct, indirect and induction proofs. Illustrations of the concepts include basic proofs from mathematical logic, elementary set theory, elementary number theory, number systems, foundations of calculus, relations, equivalence relations, functions and counting with emphasis on combinatorial proofs.

**MATH 301. Differential Equations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201. Solutions of ordinary differential equations of first order. Solutions of higher order linear differential equations with constant coefficients and variable coefficients by the methods of undetermined coefficients and variation of parameters, solutions by Laplace transforms and applications.

**MATH 302. Numerical Calculus. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 255 (or knowledge of a programming language/mathematical software package) and MATH 201, or permission of the instructor. An introduction to numerical algorithms for solving systems of linear equations, finding zeroes, numerical differentiation and definite integration, optimization.

**MATH 303. Investigations in Geometry. 3 Hours.**

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: MATH 361. Restricted to students majoring in the liberal studies for early and elementary education in the Bachelor of Interdisciplinary Studies program. A study of topics in Euclidean geometry to include congruence, similarity, measurement, coordinate geometry, symmetry and transformation in both two and three dimensions. These topics will be investigated using manipulatives and computer software.

**MATH 305. Elementary Number Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 300. Divisibility, congruences, Euler phi-function, Fermat's Theorem, primitive roots, Diophantine equations.

**MATH 307. Multivariate Calculus. 4 Hours.**

Semester course; 4 lecture hours. 4 credits. Prerequisite: MATH 201. The calculus of vector-valued functions and of functions of more than one variable. Partial derivatives, multiple integrals, line integrals, surface integrals and curvilinear coordinates. Lagrange multipliers; theorems of Green, Gauss and Stokes. Applications.

**MATH 310. Linear Algebra. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201. Systems of linear equations, vector spaces, linear dependence, bases, dimensions, linear mappings, matrices, determinants, quadratic forms, orthogonal reduction to diagonal form, eigenvalues and geometric applications.

**MATH 350. Introductory Combinatorics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201 with a minimum grade of C. An introduction to basic combinatorial concepts such as combinations, permutations, binomial coefficients, Fibonacci numbers and Pascal's triangle; basic theorems such as the pigeonhole principle and Newton's binomial theorem; algorithms such as bubble sort and quicksort; and discussion of basic applications such as chessboard problems, combinatorial games, magic squares and Latin squares.

**MATH 351. Applied Abstract Algebra. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 300. A survey of several areas in applied abstract algebra which have applications in computer science such as groups, codes, matrix algebra, finite fields and advanced graph theory.

**MATH 353. Experimental Mathematics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201 with a minimum grade of C. An introduction to a mathematical computing package, computer manipulation of lists and sets, and symbolic computing. Numerical computation will be used to investigate mathematical objects, such as integers, prime numbers, graphs, matrices and to identify properties and patterns among these objects. Random methods will be used to explore properties and patterns in long sequences and large collections.

**MATH 356. Graphs and Algorithms. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201 with a minimum grade of C. An introduction to basic graph theoretic concepts such as trees, colorings and matchings; basic theorems such as the handshaking lemma and the Gallai identities; algorithms such as Dijkstra's and Kruskal's; and discussion of famous open problems such as finding shortest tours for a traveling salesman.

**MATH 361. Numbers and Operations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: TEDU 101 and either MATH 131 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Ways of representing numbers, relationships between numbers, number systems, the meanings of operations and how they relate to one another, and computation within the number systems as a foundation for algebra. Structured observations and tutoring of elementary-level students. Restricted to students majoring in the liberal studies concentration for early and elementary education in the Bachelor of Interdisciplinary Studies program.

**MATH 362. Algebra and Functions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 361. Topics include algebraic concepts, linear, quadratic, exponential, logarithmic, trigonometric functions including graphical modeling of physical phenomena. Attention will be given to the use of graphing technology, the transition from arithmetic to algebra, working with quantitative change, and the description and prediction of change. Structured observations and tutoring of elementary-level students. Restricted to B.I.S. students in the liberal studies for early and elementary education concentration.

**MATH 380. Introduction to Mathematical Biology. 4 Hours.**

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisites: MATH 200 and BIOL 151, or permission of instructor. An introduction to mathematical biology. Various mathematical modeling tools will be covered and implemented in a range of biological areas. Additionally, the collaborative research process will be presented and discussed. Crosslisted as: BNFO 380/BIOL 380.

**MATH 391. Topics in Mathematics. 1-3 Hours.**

Semester course; 1-3 credits. May be repeated for credit. A study of selected topics in mathematics. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**MATH 401. Introduction to Abstract Algebra. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 300 and MATH 310, each with a minimum grade of C. An introduction to groups, rings and fields from an axiomatic point of view. Coset decomposition and basic morphisms.

**MATH 404. Algebraic Structures and Functions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 300 and MATH 310, each with a minimum grade of C; one additional mathematical sciences course; and permission of instructor. Semigroups, groups, rings, integral domains and fields. Exponential, logarithmic and trigonometric functions. Graphing in parametric and polar coordinates. Arithmetic and geometric sequences and series.

**MATH 407. Advanced Calculus. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 300. Theoretical aspects of calculus. Topics include properties of real numbers, countable and uncountable sets, sequences and series, limits, continuity, derivatives, and Riemann integration.

**MATH 409. General Topology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 407 with a minimum grade of C. Foundations and fundamental concepts of point-set topology. Topological spaces, continuity, convergence, connected sets, compactness, product spaces, quotient spaces, function spaces, separation properties.

**MATH 415. Numerical Methods. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 255, MATH 301 and MATH 310, each with a minimum grade of C. Numerical methods for interpolation, solving systems of linear equations and initial value problems (ordinary differential equations) and the exploration of computational error.

**MATH 427. Excursions in Analysis: Real. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 307, MATH 310 and MATH 407. May be repeated once for credit with a different emphasis and permission of the instructor. Intensive study of ideas and applications from real analysis.

**MATH 428. Excursions in Analysis: Complex. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 307, MATH 310 and MATH 407. May be repeated once for credit with a different emphasis and permission of the instructor. Intensive study of ideas and applications from complex analysis.

**MATH 429. Excursions in Analysis: Applied. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301, MATH 307, MATH 310 and MATH 407. May be repeated once for credit with a different emphasis and permission of the instructor. Intensive study of ideas and applications from applied analysis.

**MATH 430. The History of Mathematics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 300, MATH 307, MATH 310, and either MATH 301 or OPER 327, all with a minimum grade of C. Surveys major trends in the development of mathematics from ancient times through the 19th century and considers the cultural and social contexts of mathematical activity.

**MATH 431. Expositions in Modern Mathematics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 300, MATH 307, MATH 310, and either MATH 301 or OPER 327, all with a minimum grade of C. Descriptively studies several major ideas relevant to present-day mathematics, such as the advent of pure abstraction, difficulties in the logical foundations of mathematics, the impact of mathematics and statistics in the 20th century and the computer revolution.

**MATH 432. Ordinary Differential Equations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 300, MATH 301, MATH 307 and MATH 310, each with a minimum grade of C. Existence and uniqueness of solutions, linearization and stability analysis, Lyapunov stability theory, periodic solutions, and bifurcations. Applications and simulations are emphasized.

**MATH 433. Partial Differential Equations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 300, MATH 301, MATH 307 and MATH 310, each with a minimum grade of C. Parabolic (heat), hyperbolic (wave) and elliptic (steady-state) partial differential equations are studied. Solution techniques such as separation of variables, reflection methods, integral transform methods and numerical methods are demonstrated. Practical problems and applications are emphasized.

**MATH 434. Discrete Dynamical Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 300, MATH 301, MATH 307 and MATH 310, each with a minimum grade of C. Theory and applications of difference equations including existence and uniqueness of solutions, linearization and stability, periodic solutions, and bifurcations.

**MATH 454. Using Technology in the Teaching of Mathematics. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MATH 200 and STAT 212, each with a minimum grade of C; six additional credits in the mathematical sciences; and permission of the instructor. Using graphing calculators, calculator-based labs and computer software packages in teaching topics in algebra, geometry, trigonometry, statistics, finance and calculus.

**MATH 480. Methods of Applied Mathematics for the Life Sciences: Discrete. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301, MATH 307, MATH 310 and MATH 380, each with a minimum grade of C. Focuses on the use of discrete dynamical system models to describe phenomena in biology and medicine. Students will explore the theoretical mathematics necessary to analyze these models. Computational solutions to these models will be developed and implemented to validate the models and to further explore the biological phenomena.

**MATH 481. Methods of Applied Mathematics for the Life Sciences: ODE. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301, MATH 307, MATH 310 and MATH 380, each with a minimum grade of C. Focuses on the use of ordinary differential equation models to describe phenomena in biology and medicine. Students will explore the theoretical mathematics necessary to analyze these models. Computational solutions to these models will be developed and implemented to validate the models and to further explore the biological phenomena.

**MATH 482. Methods of Applied Mathematics for the Life Sciences: PDE. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301, MATH 307, MATH 310 and MATH 380, each with a minimum grade of C. Focuses on the use of partial differential equation models to describe phenomena in biology and medicine. Students will explore the theoretical mathematics necessary to analyze these models. Computational solutions to these models will be developed and implemented to validate the model and to further explore the biological phenomena.



**MATH 490. Mathematical Expositions. 3 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: UNIV 200 or HONR 200. Restricted to seniors in mathematical sciences with at least 85 credit hours taken toward the degree. Required for all majors in the Department of Mathematics and Applied Mathematics. A senior capstone course in the major designed to help students attain proficiency in expository mathematical writing and oral presentation, which require the efficient and effective use of mathematics and the English language. Students will learn a variety of topics in mathematics, write reviews of selected award-winning mathematics papers and write a senior paper.

**MATH 492. Independent Study. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. Maximum 4 credits per semester; maximum total of 6 credits. Generally open only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course. The student must submit a proposal for investigating some area or problem not contained in the regular curriculum. The results of the student's study will be presented in a report.

**MATH 493. Mathematical Sciences Internship. 3 Hours.**

Semester course; the equivalent of at least 15 work hours per week for a 15-week semester. 3 credits. Mathematical sciences majors only with junior or senior standing. Admission by permission from the department chair. Through placement in a position in business, industry, government or the university, the student will serve as an intern in order to obtain a broader knowledge of the mathematical sciences and their applications.

## Military Sciences (MILS)

**MILS 101. Military Science and Leadership: Foundations of Officership. 1 Hour.**

Semester course; 1 lecture and 1 laboratory hour. 1 credit. Introduces students to fundamental components of service as an officer in the U.S. Army. Forms building blocks of progressive lessons in values, fitness, leadership and officership. Also addresses "life skills" including communications theory and practice (written and oral) and interpersonal relationships.

**MILS 102. Military Science and Leadership: Introduction to Leadership. 1 Hour.**

Semester course; 1 lecture and 1 laboratory hour. 1 credit. Introduces students to "life skills" of problem-solving, decision-making and leadership. Designed to help students be more effective as leaders, both immediately on campus and in the long term in either military or civilian life. Introduces students to fundamental officer skills such as map reading, land navigation, tactics and leadership values/actions. Using these basic skills, students will build a rudimentary understanding of the core competencies necessary to become an Army officer and leader.

**MILS 201. Military Science and Leadership: Innovative Team Leadership. 2 Hours.**

Semester course; 2 lecture and 1 laboratory hours. 2 credits. Prerequisites: MILS 101 and 102 or permission of department chair. Explores the dimensions of creative and innovative tactical leadership strategies and styles by examining team dynamics and two historical leadership theories that form the basis of the Army leadership framework. Aspects of personal motivation and team building are practiced by planning, executing and assessing team exercises, and by participating in leadership labs. The course continues to develop knowledge of leadership values and attributes through understanding Army rank, structure and duties as well as broadening knowledge of land navigation and squad tactics. Case studies provide a tangible context for learning the Soldiers Creed and Warrior Ethos as they apply in the contemporary operating environment.

**MILS 202. Military Science and Leadership: Foundations of Tactical Leadership. 2 Hours.**

Semester course; 2 lecture and 1 laboratory hours. 2 credits. Prerequisite: MILS 201 or permission of department chair. Examines the challenges of leading tactical teams in the complex contemporary operating environment (COE). Highlights dimensions of terrain analysis, patrolling and operation orders. Continued study of the theoretical basis of the Army leadership framework explores the dynamics of adaptive leadership in the context of military operations. Cadets develop greater self-awareness as they assess their own leadership styles and practice communication and team-building skills. COE case studies give insight into the importance and practice of teamwork and tactics in real-world scenarios.

**MILS 203. Military Science and Leadership: Leader's Training Course. 6 Hours.**

0-6 credits. Prerequisites: enrollment in the ROTC program, military service obligation and permission of department chair. Five-week summer course consisting of leadership training at Fort Knox, Ky. Completion of this course equates to completion of MILS 101, 102, 201 and 202, and enables students to enroll in the advanced military leadership courses. Amount of academic credit awarded depends upon amount of basic military science credit previously earned. Travel pay and salary provided through Department of Military Science and Leadership. Graded pass/fail.

**MILS 301. Military Science and Leadership: Adaptive Team Leadership. 3 Hours.**

Semester course; 3 lecture and 1 laboratory hours. 3 credits. Prerequisites: MILS 101, 102, 201 and 202 (or MILS 203), permission of department chair and military service obligation. Challenges cadets to study, practice and evaluate adaptive team leadership skills as they are presented with the demands of the ROTC Leader Development and Assessment Course. Challenging scenarios related to small unit tactical operations are used to develop self-awareness and critical thinking skills. Cadets receive systematic and specific feedback on leadership abilities.

**MILS 302. Military Science and Leadership: Leadership in Changing Environments. 3 Hours.**

Semester course; 3 lecture and 1 laboratory hours. 3 credits. Prerequisite: MILS 301 or permission of department chair. Provides instruction and case studies that build upon leadership competencies and military skills attained in MILS 301 in preparation for future responsibilities as Army officers. Specific instruction is given in individual leader development, planning and execution of small unit operations, individual and team development, and the Army as a career choice.



**MILS 306. Military Science. 0 Hours.**

0 credit. Prerequisite: MILS 302 and successful completion of four basic military science courses or MILS 203 Basic Military Science for six credits. ROTC National Advanced Leadership Camp. The ROTC camp summer practicum is six weeks long. Individual and group experience for application of leadership training. Exposure to leadership situations that require decisions made under physical and mental stress conditions.

**MILS 401. Military Science and Leadership: Developing Adaptive Leaders. 3 Hours.**

Semester course; 3 lecture and 1 laboratory hours. 3 credits. Prerequisite: MILS 302 or permission of department chair. Develops student proficiency in planning, executing and assessing complex operations, functioning as a member of a staff, and providing performance feedback to subordinates. Cadets are given situational opportunities to assess risk, make ethical decisions and lead fellow ROTC cadets. Lessons on military justice and personnel processes prepare cadets to make the transition to becoming Army officers. MS IV (senior) cadets lead lower-level cadets. Both classroom and battalion leadership experiences are designed to prepare MS IV cadets for their first unit of assignment. Cadets identify responsibilities of key staff, coordinate staff roles and use battalion operations situations to teach, train and develop subordinates.

**MILS 402. Military Science and Leadership: Leadership in a Complex World. 3 Hours.**

Semester course; 3 lecture and 1 laboratory hours. 3 credits. Prerequisites: MILS 301, 302 and 401, or permission of department chair. Explores the dynamics of leading in the complex situations of current military operations in the contemporary operating environment. Cadets examine differences in customs and courtesies, military law, principles of war, and rules of engagement in the face of international terrorism. Cadets also explore aspects of interacting with non-government organizations, civilians on the battlefield and host nation support. Course places significant emphasis on preparing cadets for Basic Officer Leadership courses and their first unit of assignment. Utilizes case studies, scenarios and "What now, Lieutenant?" exercises to prepare cadets to face the complex ethical and practical demands of leading as a commissioned officer in the U.S. Army.

**Operations Research (OPER)****OPER 327. Mathematical Modeling. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 200. Fundamental concepts of mathematical modeling. Topics may include differential equation models, optimization models and probabilistic models. Practical problems will be discussed throughout.

**OPER 427. Deterministic Operations Research. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 245 or 255, MATH/OPER 327 and MATH 310. Introduction to topics in optimization including linear programming, network models and integer programming. Focuses on constructing sound models and on solving them using appropriate software. Algorithms and model properties are also discussed. Students may not receive degree credit for both OPER 427 and OPER 527.

**OPER 428. Stochastic Operations Research. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 245 or 255, MATH/STAT 309 and MATH 310. Introduction to topics in discrete-event and Monte Carlo simulation including the application of probabilistic models in real-world situations, random number generation, random variate generation and Monte Carlo integration. Students may not receive degree credit for both OPER 428 and OPER 528.

**Philosophy (PHIL)****PHIL 101. Introduction to Philosophy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to some of the main branches of philosophy. Some of the issues that might be addressed are: What is knowledge? Is reason or experience the basis for all knowledge? Can we have knowledge of the past or of the future? What is truth? Does God exist? Is there a mental realm separate from the material realm? Are the laws of nature deterministic? Do we have free will? What makes an action morally permissible? What is the proper role of the state in regulating our lives? This course is directed primarily at first- and second-year students.

**PHIL 103. Ancient Greek and Medieval Western Philosophy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of Western philosophy from the ancient Greeks (e.g., Socrates, Plato and Aristotle) through the medieval period (e.g., Augustine and St. Thomas Aquinas).

**PHIL 104. Modern Western Philosophy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of Western philosophy from the Renaissance to the 19th century (e.g., Hobbes, Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, Kant, Hegel and Marx).

**PHIL 201. Critical Thinking About Moral Problems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. Focuses on the development of sound critical-thinking skills and their application to a range of topics in moral philosophy, including questions about the nature of morality and whether we have reason to be moral, and also to various topics in applied ethics such as the morality of abortion, animal rights, world hunger, pornography, capital punishment, sexual behavior, environmental ethics and reverse discrimination. Credit toward graduation may be received for only one of PHIL 201, 212, 213 or 214.

**PHIL 211. History of Ethics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. A philosophical investigation of the main concepts and theories of ethics and their application to fundamental moral questions, as illustrated by the ethical systems of such historically important Western philosophers as Plato, Aristotle, Augustine, Hume, Mill and Kant.

**PHIL 212. Ethics and Applications. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. A philosophical investigation of the main concepts and theories of ethics, with applications to fundamental moral questions as they arise in different areas. Such problems as abortion, the welfare of animals, world hunger, pornography, capital punishment, nuclear defense, sexual behavior, environmental ethics and reverse discrimination may be used as illustrations. Credit toward graduation may be received for only one of PHIL 201, 212, 213 or 214.

**PHIL 213. Ethics and Health Care. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. A philosophical investigation of the main concepts and theories of ethics, with applications to fundamental moral questions as they arise in health care. The following issues may be used as illustrations: abortion, euthanasia and the right to die, human experimentation, treating mental illness, genetic technologies, the concepts of health and disease, and the funding of health care. Credit toward graduation may be received for only one of PHIL 201, 212, 213 or 214.

**PHIL 214. Ethics and Business. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. A philosophical investigation of the main concepts and theories of ethics, with applications to fundamental moral questions as they arise in business. The following issues may be used as illustration: affirmative action, investment in unethical companies or countries, product safety, whistle blowing and advertising. Credit toward graduation may be received for only one of PHIL 201, 212, 213 or 214.

**PHIL 221. Critical Thinking. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to inductive and deductive reasoning, with emphasis on common errors and fallacies.

**PHIL 222. Logic. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An evaluation of deductive arguments utilizing the methods of symbolic logic.

**PHIL 230. Reason, Science and the Self. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Open to Honors College students only. The reasonableness of a belief often depends on the arguments that support it. One primary goal of this course is to sharpen the abilities to identify, analyze and assess arguments. Another primary goal is to show how to apply critical reasoning skills to philosophical explorations of the nature of science, knowledge and personal identity.

**PHIL 250. Thinking About Thinking. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. An interdisciplinary course about thinking. Covers the development of the principles of reasoning, such questions as how thinking relates to behavior and brain activity and how to think about specific areas of our lives, such as science, morality, religion, the arts and the law.

**PHIL 291. Topics in Philosophy. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. Prerequisite: as specified in the Schedule of Classes or written permission of instructor. An introductory study of an individual philosopher, a particular philosophical problem or a narrowly defined period or school. See the Schedule of Classes for specific topics to be offered each semester.

**PHIL 301. Mind and Reality. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 9 credits in philosophy including PHIL 221 or PHIL 222, and one of PHIL 101, PHIL 103 or PHIL 104, or permission of instructor. An examination of central metaphysical issues, for example, the mind-body problem, free will, causality, action, realism and the problems of universals.

**PHIL 302. Reason and Knowledge. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 9 credits in philosophy including PHIL 221 or PHIL 222, and one of PHIL 101, PHIL 103 or PHIL 104, or permission of instructor. An examination of central epistemological issues, for example, the problem of justification, empirical knowledge, perception, rationality and truth.

**PHIL 303. Philosophy of Language. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 9 credits in philosophy including PHIL 222 and 6 additional credits, at least 3 of which must be from PHIL 101, PHIL 103 or PHIL 104, or permission of the instructor. An examination of central issues in the philosophy of language; for example, the nature of meaning and reference, reductionism, properties of languages and the character of artificial symbols systems.

**PHIL 320. Philosophy of Law. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 9 credits in philosophy, which must include PHIL 221 or PHIL 222, and one of PHIL 201, PHIL 211, PHIL 212, PHIL 213, or PHIL 214, or permission of instructor. A critical examination of the nature of law and criminal justice in the light of important human values. The following topics will be considered: the nature of law and legal reasoning, the legal enforcement of morality, and such controversies as punishment versus rehabilitation and the right to due process versus the need for public safety.

**PHIL 322. Tibetan Buddhism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A basic introduction to the history, development and mythology of the Buddhism of Tibet focusing on the Indian heritage and shared basis of all Buddhist practices, a clear identification of the three vehicles found in Buddhism, and a careful consideration of the path of the Bodhisattva, the hero of Great Vehicle Buddhism. Crosslisted as: RELS 322.

**PHIL 326. Existentialism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 3 credits in philosophy (exclusive of PHIL 221 and PHIL 222) or permission of instructor. An examination of the nature of truth, freedom, responsibility, individuality and interpersonal relations as found in some principal writings of Kierkegaard, Nietzsche, Jaspers, Sartre, Heidegger, Camus, Buber and Marcel. Crosslisted as: RELS 326.

**PHIL 327. Ethical Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 9 credits in philosophy, which must include PHIL 221 or PHIL 222, and one of PHIL 201, PHIL 211, PHIL 212, PHIL 213, or PHIL 214, or permission of instructor. A study of the problems of philosophical ethics, including relativism, egoism, utilitarianism, intrinsic value and the meaning and justification of ethical principles. Both historical and contemporary thinkers will be considered.

**PHIL 331. Philosophy of Science. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 3 credits of philosophy and 6 credits of natural sciences courses. An examination of the bases of scientific inquiry in both the natural and social sciences; including a study of such topics as hypothesis formation and testing, and the nature of scientific laws, theories and explanations.

**PHIL 335. Social and Political Philosophy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 9 credits in philosophy, which must include PHIL 221 or PHIL 222, and one of PHIL 201, PHIL 211, PHIL 212, PHIL 213, or PHIL 214, or permission of instructor. A critical examination of political power and of the relationship between the individual and society. Possible topics include: anarchism and the justification of having a state at all; political views about what sort of state is justified (e.g., conservatism, liberalism, communitarianism, feminism, Marxism); private vs. collective property; market vs. planned economies; democracy vs. totalitarianism; and civil disobedience and revolution.

**PHIL 340. Philosophy for Children. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: two philosophy courses, which must include at least one of PHIL 101, 103 or 104. A service-learning course requiring at least 15 hours of service in which students will be required to lead philosophical discussions with primary/secondary schoolchildren. An analysis of perennial philosophical questions and problems with the aim of introducing them to children. Some of the questions that might be addressed include: What is happiness? What is justice? What is a mind? Can a mind exist apart from a body? Can machines think? What is time? What is knowledge? What are the limits of human knowledge?

**PHIL 342. Buddhist Reasoning and Debate. 4 Hours.**

Semester course; 4 lecture hours. 4 credits. Prerequisite: RELS/INTL 311. A basic introduction to perception, logic and epistemology in Buddhist thought. The course is designed to convey basic reasoning skills including formation of arguments, checking arguments for validity, and developing techniques and strategies for rational discourse. Crosslisted as: RELS 342.

**PHIL 391. Topics in Philosophy. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. Prerequisite: as specified in the Schedule of Classes or permission of instructor. A study of an individual philosopher, a particular philosophical problem or a narrowly defined period or school. See the Schedule of Classes for specific topics to be offered each semester.

**PHIL 408. Indian Tradition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: At least six credits in philosophy or religious studies courses. A systematic analysis of the major theories of Indian religious and philosophical thought: Vedas, Upanishads, Gita, Charvaka, Jainism, Buddhism, the six systems of Hinduism and contemporary development. Crosslisted as: RELS 408.

**PHIL 410. The Chinese Tradition in Philosophy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the development of Confucianism, of alternative ways of thought prior to the fall of the Han Dynasty and of neo-Confucianism. The systems of thought are examined in the light of their social, political and religious impact on China, Korea and Japan. Crosslisted as: RELS 410/INTL 410.

**PHIL 412. Zen Buddhism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of Zen Buddhism, including backgrounds in Indian philosophy and practice, development in China and Korea, and present-day Zen theory and practice in Japan and in Western countries. Crosslisted as: RELS 412/INTL 412.

**PHIL 421. Aesthetics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 3 credits in philosophy (exclusive of PHIL 221 and PHIL 222) or permission of instructor. A critical survey of philosophies of art from antiquity to the 20th century. Topics include: the nature of art, creativity, aesthetic experience and aesthetic judgments.

**PHIL 430. Philosophy of Religion. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 3 credits in philosophy (exclusive of PHIL 221 and PHIL 222) or permission of instructor. A critical analysis of such topics as the concept of God, arguments for the existence of God, the problem of evil, the concept of faith, religious language and the conceptual problems posed by the plurality of religions. Crosslisted as: RELS 430.

**PHIL 440. Mysticism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A critical analysis of the varieties of mysticism in world religions. Arguments for and against mysticism will be emphasized. Mysticism will be related to art, psychology, science, philosophy, theology and magic. Crosslisted as: RELS 440.

**PHIL 490. Seminar in Philosophy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of 6 credits. Prerequisite: one of PHIL 301, 302, 303, 320, 327, 335 or permission of instructor in exceptional cases. Research and analysis of selected philosophical topic in a seminar setting. Must be taken at least once as a senior (i.e., after the completion of at least 85 credit hours toward the degree) to satisfy the capstone requirement.

**PHIL 492. Independent Study. 1-4 Hours.**

Semester course; variable hours. Variable credit. Maximum of 6 credits per semester; maximum total of 12 credits for all independent study courses. Open generally to students of only junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration of the course. An independent study course to allow interested majors in philosophy to do research, under the direction of a professor qualified in that field, in an area of major interest.

**PHIL 496. Senior Research Project. 1-4 Hours.**

Semester course; 1-4 credits. Prerequisites: Senior status; two courses from PHIL 301, 302, 303, 320, 327, 335, 391; and written approval by faculty supervisor. An individual research project to develop a polished journal-length research paper. This course is intended primarily for students who wish to develop a dossier paper for submission to a philosophy graduate program.

**Physics (PHYS)****PHYS 101. Foundations of Physics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. For non-science majors. Introduction to the fundamental ideas of physics. The course covers selected topics in mechanics, heat, optics, electricity and magnetism and modern physics. Not applicable toward the physics major. An optional laboratory may be taken with this course. See PHYZ 101L.

**PHYS 103. Elementary Astronomy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A descriptive approach to astronomy dealing with basic features of our solar system, our galaxy and the universe. Not applicable toward physics major. An optional laboratory may be taken with this course. See PHYZ 103L.

**PHYS 107. Wonders of Technology. 4 Hours.**

Semester course; 5 lecture/laboratory/recitation hours. 4 credits. Introduction to physics concepts involved in everyday technological applications. The course covers selected topics in mechanics, heat, optics, electricity and magnetism, and modern physics by depicting their role in common devices. The laboratory focuses on applications of physics principles to everyday real-life situations. Not applicable toward the physics major.

**PHYS 201. General Physics. 4 Hours.**

Continuous courses; 3 lecture and 3 laboratory hours. 4-4 credits. Prerequisite: MATH 151. Completion of PHYS 201 to enroll in PHYS 202. Designed primarily for life-science majors. First semester: basic concepts of motion, waves and heat. Second semester: basic concepts of electricity, magnetism, light and modern physics. Not applicable toward physics major.

**PHYS 202. General Physics. 4 Hours.**

Continuous courses; 3 lecture and 3 laboratory hours. 4-4 credits. Prerequisite: MATH 151. Completion of PHYS 201 to enroll in PHYS 202. Designed primarily for life-science majors. First semester: basic concepts of motion, waves and heat. Second semester: basic concepts of electricity, magnetism, light and modern physics. Not applicable toward physics major.

**PHYS 207. University Physics I. 5 Hours.**

Semester course; 3 lecture, 1 recitation and 3 laboratory hours. 5 credits. Prerequisite: MATH 200 or permission of instructor. A vector- and calculus-based introduction to the fundamental concepts of mechanics, heat and wave motion.

**PHYS 208. University Physics II. 5 Hours.**

Semester course; 3 lecture, 1 recitation and 3 laboratory hours. 5 credits. Prerequisite: PHYS 207. Corequisite: MATH 201. A vector- and calculus-based introduction to the fundamentals of electricity, magnetism and optics.

**PHYS 215. Science, Technology and Society. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examination of scientific breakthroughs that have led to transformational technologies that are continuing to impact society today. Topics include a historical perspective, an understanding of scientific principles and technologies and an examination of how such discoveries have changed society. Not applicable toward physics major.

**PHYS 291. Topics in Physical Science. 1-3 Hours.**

Semester course; 1-3 lecture or laboratory hours. 1-3 credits per semester. A study of a selected topic in physics, astronomy, geology, meteorology or oceanography. Not applicable toward physics major. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**PHYS 301. Classical Mechanics I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 208 and MATH 307. Corequisite: MATH 301. Review of vector calculus. Newtonian mechanics: single particle, oscillations, motion under central forces and dynamics of a systems of particles.

**PHYS 302. Classical Mechanics II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 301 and MATH 301. Motion in noninertial frames, dynamics of rigid bodies, coupled oscillators, continuous systems and wave equations in one dimension.

**PHYS 307. The Physics of Sound and Music. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: A 100- or 200-level physics course or equivalent and the ability to read music or sing or play a musical instrument, or permission of instructor. Basics of the physics of waves and sound. Fourier synthesis, tone quality, human ear and voice, musical temperament and pitch, physics of musical instruments, electronic synthesizers, sound recording and reproduction, room and auditorium acoustics. Not applicable toward the physics major. Crosslisted as: MHIS 307.

**PHYS 315. Energy and the Environment. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior or senior standing. A study of society's demands for energy, how it is currently being met, the environmental consequences thereof and some discussion of alternatives. Open to non-physics majors; not applicable to the physics major. Crosslisted as: ENVS 315.

**PHYS 320. Modern Physics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 208 and MATH 307. Corequisite: MATH 301. Foundations of modern physics including special relativity, thermal radiation and quantization, wave-particle duality of radiation and matter, Schrodinger equation, atomic, nuclear and particle physics, and molecular structure and spectra. A continuation of PHYS 208.

**PHYS 325. Visualization of Physics Using Mathematica. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHYS 320 or permission of instructor. Visualization of various areas of physics using the Mathematica language for performing numerical calculations and producing graphics and animations. Examples will be taken from classical mechanics, classical electromagnetism, modern physics, statistical mechanics and condensed matter physics.

**PHYS 340. Statistical Mechanics and Thermodynamics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 301 and MATH 301. Microscopic theory of temperature, heat and entropy, kinetic theory, multicomponent systems, and quantum statistics. Mathematical relationships of thermodynamics.

**PHYS 351. Guided Inquiry for University Physics I. 1.5 Hour.**

Semester course; 1 lecture and 1 recitation hour. 1.5 credits. Prerequisites: PHYS 207 and permission of instructor. Student learning assistants aid in recitation sections of PHYS 207 University Physics I using guided inquiry and group-based activities. Further develops the core skills of PHYS 207. Introduces students to the principles of active and collaborative learning in physics through practical, hands-on problem-solving, class discussions and demonstrations.

**PHYS 352. Guided Inquiry for University Physics II. 1.5 Hour.**

Semester course; 1 lecture and 1 recitation hour. 1.5 credits. Prerequisites: PHYS 208 and permission of instructor. Student learning assistants aid in recitation sections of PHYS 208 University Physics II using guided inquiry and group-based activities. Further develops the core skills of PHYS 208. Introduces students to the principles of active and collaborative learning in physics through practical, hands-on problem-solving, class discussions and demonstrations.

**PHYS 376. Electromagnetism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 301 and MATH 301. Electrostatics, magnetism and electromagnetic properties of matter, Maxwell's equations, electromagnetic waves, boundary conditions, and polarization.

**PHYS 380. Quantum Physics I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 301, PHYS 320 and MATH 301, or permission of instructor. Brief introduction to the correspondence between classical and quantum mechanics, Schrodinger wave equation, operator methods in quantum mechanics, angular momentum and conservation laws, solution to harmonic oscillator and the hydrogen atom, magnetic dipole momentum and spin.

**PHYS 391. Topics in Physics. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits per semester. Maximum total of 6 credits. In-depth study of a selected topic in physics or physics-related technology, usually at a level requiring only elementary algebra. Not applicable toward physics major. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**PHYS 397. Directed Study. 1-3 Hours.**

Semester course; variable hours. 1-3 credits per semester. Maximum of 3 credits applicable toward physics major requirement; maximum total of 4 credits. Open to nonmajors. Determination of amount of credit and permission of instructor must be obtained before registration of course. Intended to allow nonmajors and majors to examine in detail an area of physics or physics-related technology not otherwise available in upper-level courses. May involve either directed readings or directed laboratory work.

**PHYS 420. Quantum Physics II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHYS 380 or permission of instructor. Transition rates, addition of angular momentum, multi-electron atoms-ground state, X-ray and optical excitations, time independent perturbation theory, relativistic hydrogen atom and the structure of atoms, collision theory, nuclear structure, elementary particles and their symmetries.



**PHYS 422. Optics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHYS 376 or permission of instructor. Comprehensive study of propagation of light, including geometrical optics, polarization, interference, diffraction, Fourier optics and quantum optics.

**PHYS 440. Introduction to Condensed Matter Physics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 340 and 380. Corequisite: PHYS 376. Structure and bonding in solids, phonons, free electron Fermi gas, energy bands, semiconductors, Fermi surface, optical properties and magnetism.

**PHYS 450. Senior Physics Laboratory. 3 Hours.**

Semester course; 1 lecture and 4 laboratory hours. 3 credits. Prerequisites: PHYS 301 and 320, and PHYZ 320. Experiments in condensed matter physics with an introduction to the instrumentation and data analysis used in the research laboratory.

**PHYS 483. Introduction to Astrophysics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 320 and PHYS 340. Pre- or corequisites: PHYS 376 and PHYS 380. Basic concepts of star formation and evolution, galactic structures, and cosmology. Includes stellar atmospheres and interiors, the sun, the Milky Way and other galaxies, and black holes.

**PHYS 490. Seminar in Conceptual Physics. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisites: PHYS 340, PHYS 376, PHYS 380 and PHYZ 320. Restricted to seniors in physics with at least 85 credit hours taken toward the degree. A senior capstone course in physics designed to help students formulate physics-related questions in such a way that they can obtain quantitative answers. Students will describe their results in a senior paper and in an oral presentation.

**PHYS 491. Topics in Physics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Maximum of 3 credits applicable toward physics major requirement; maximum total of 6 credits. An in-depth study of a selected topic in physics. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**PHYS 492. Independent Study. 1-3 Hours.**

Semester course; variable hours. 1-3 credits per semester. Maximum of 3 credits applicable toward physics major requirement; maximum total of 8 credits. Open generally to students of only junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration of the course. Independent projects in experimental or theoretical physics.

**Physics Lab (PHYZ)****PHYZ 101. Foundations of Physics Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: PHYS 101. An optional laboratory consisting of experiments and activities correlated with PHYS 101.

**PHYZ 103. Elementary Astronomy Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: PHYS 103. An optional laboratory course consisting of experiments and activities related to PHYS 103.

**PHYZ 320. Modern Physics Laboratory. 1 Hour.**

Semester course; 3 laboratory hours. 1 credit. Pre- or corequisite: PHYS 320. Experimental work correlated with PHYS 320.

**Political Science (POLI)****POLI 103. U.S. Government. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of American national government focusing on its underlying political ideas, constitutional basis, major institutions and their interaction in the determination of public policy.

**POLI 105. International Relations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introductory analysis of interstate relations and world affairs. Attention focuses on theories of international politics, military capabilities and their application, international organizations, global economic trends, domestic sources of state behavior and other selected issues as appropriate. Crosslisted as: INTL 105.

**POLI 107. Political Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduces students to the great thinkers and ideas of political theory. Provides an analysis of the relationship between ethics and politics in contemporary democracy and current challenges to traditional democratic theory. Topics discussed may include the nature of human existence and civilization; political obligations between the state and the citizen and among citizens; attempts to justify authority; the content and uses of power; and the right to disobedience and resistance, freedom, social justice, and equality.

**POLI 109. Comparative Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduces students to the ways in which societies around the world govern themselves. Covers such topics as the historical evolution of the political system, political processes and institutions, and key issues in contemporary public policy for a globally representative group of 10 to 15 countries.

**POLI 301. U.S. Parties and Elections. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An overview of U.S. political parties and elections. Topics will include the history, organization and methods of U.S. political parties, presidential nominations and elections; Congressional elections.

**POLI 302. Politics of the Civil Rights Movement. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The main objectives of the course are to introduce and examine the personalities and activities of the modern Civil Rights Movement. The course provides the historical background leading up to the peak years of the struggle for racial equality in America. Crosslisted as: AFAM 302.

**POLI 303. Public Opinion, Polling and the Media. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Study of the interplay among the mass media, political campaigns and public opinion. Topics include public opinion and its measurement, how campaigns use public opinion polling and the impact of the media on public opinion.

**POLI 304. Political Campaigns and Communication: New Hampshire Primary. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Enrollment requires permission of instructor. Introduces students to the historical and political contexts of presidential primary campaigning. Investigates candidate strategy and ways candidates seek out money, media coverage and grassroots organization. Includes a week-long trip to New Hampshire during the first-in-the-nation primary to provide students with hands-on experience. Offered as an intersession class during presidential election years.



**POLI 305. Political Campaigns and Communication: Theory and Process. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of political campaigns focusing on presidential elections. Analysis includes the study of electoral contexts, political mobilization, campaign organizational structures and strategies, campaign rhetoric, and the evolution of campaign-related technology such as polling and social media.

**POLI 306. The Congress. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the behavior of legislators and the structures and processes of legislative decision making in the U.S. Congress. Analysis will include both the internal and external environment of congressional policy making, and an assessment of the impact of congressional policy.

**POLI 308. U.S. Presidency. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A political and institutional study of the chief executive, focusing especially on the presidential personality and relations with Congress, the bureaucracy, the courts and the shaping of domestic and foreign policy.

**POLI 309. Bureaucratic Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An analysis of the nature of bureaucracy and bureaucratic phenomena in American governments; the role and involvement of the bureaucracy in politics and the policy-making process. Primary focus on theories and approaches to understanding the central role of bureaucracy in modern society and its use and abuse of power.

**POLI 310. Public Policy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An analytical survey of policy formulation and implementation in the United States, together with an examination of the impact of policy upon individuals and groups in American society.

**POLI 311. Politics of the Environment. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An exploration of the current controversy about environmental politics and the issues and crisis it centers on. Special attention will be given to the constitutional, political and geographical factors in the development of environmental policy and the organized effort to deal with governmental actions and inaction and its impact on policy outcomes. Crosslisted as: ENVS 311.

**POLI 313. U.S. Constitutional Law: Civil Rights and Civil Liberties. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of the major provisions of the U.S. Constitution concerning civil rights and civil liberties as interpreted by the U.S. Supreme Court. Topics to be covered include how the federal courts enforce individual rights found in the Constitution, limitations on governmental actions and the use of the Constitution as a starting point for discussions of the nation's need to balance competing interests of individuals, government and societal values.

**POLI 314. U.S. Constitutional Law. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of the development of the Constitution through judicial interpretation. Topics to be covered include an introduction to the operation of the Supreme Court, decisions on federalism, the powers of Congress, the president, the judiciary and civil rights and civil liberties.

**POLI 315. Courts and Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of theories and models of judicial decision-making in the Supreme Court, focusing on judicial structure and procedures, policy-making analysis, political ideology, and judicial activism.

**POLI 316. Women and the Law. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course will introduce students to the history, politics and status of women under the American legal system. Topics to be covered may include equal protection, sexual violence, the particular rights of women of color and lesbians, reproductive rights, women criminals and women in the legal profession. Crosslisted as: GSWS 316.

**POLI 318. Politics of Race, Class and Gender. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the racial, class and gender influences on the history and development of political values, conflicts, processes, structures and public policy in the United States. Crosslisted as: AFAM 318/GSWS 318.

**POLI 319. Women and American Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course analyzes the participation of women in American politics. Attention is given to both women's historical and contemporary roles in politics, their participation as voters and citizens, and their behavior as candidates and office holders. Additional topics may include workplace, family and education issues and reproductive rights. Crosslisted as: GSWS 319.

**POLI 320. Research Methods in the Social Sciences. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Current methods of research in the social sciences. Includes a brief introduction to the use of SPSS for storage, retrieval and exploration of social science data. Crosslisted as: SOCY 320.

**POLI 321. City Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of urban political power and influence, governance, and public policy. Topics include: power and influence, governmental structures and the political process, public policy, and service delivery.

**POLI 322. State and Local Government and Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of the politics and governance of states and localities. Attention is devoted to political culture, interest groups, political parties, the legislative, executive and judicial components of state government, along with the structure and political processes of local governments.

**POLI 323. Virginia Government and Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of Virginia state government and politics, with appropriate attention given to political culture, interest groups, political parties, the media and the legislative, executive and judicial branches of government.

**POLI 329. Intergovernmental Relations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of vertical and horizontal intergovernmental relations. Attention will be given to the major variants of federalism. The role of categorical and block grants in programmatic federalism will be assessed. Trends in intergovernmental relations will be advanced.

**POLI 331. Public Administration. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the concepts and practices of public administration in the United States. Particular attention will be given to the administrative procedures and practices of the national government and of the government in Virginia.

**POLI 341. History of Political Theory: Classical to Modern. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of leading political ideas of the ancient and medieval periods.

**POLI 342. History of Political Theory: Modern to Contemporary. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of leading political ideas of modern and contemporary thought.

**POLI 343. Black Political Thought. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An historical and sociological perspective on the political and social ideas of black thinkers from David Walker to the present. Crosslisted as: AFAM 343.

**POLI 344. Contemporary Political Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course provides a survey of recent trends in political theory. It examines updates of the major ideological traditions, arguments about the nature of modernity and recent developments in environment, feminist and non-Western thought.

**POLI 345. African-American Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. In this course, students will discuss and analyze the dynamics of the black experience in the American political system. The status of African-Americans in the United States and the struggle for racial equality will be examined, as will the manner in which American institutions have responded to these phenomena. Students will examine the race/class metric in African-American politics, particularly policies of Affirmative Action as a black progress strategy. Crosslisted as: AFAM 345.

**POLI 351. Governments and Politics of the Middle East. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A comparative analysis of political systems in the Middle East including the study of contemporary aspects of traditionalism, the political nature of transition, the instruments of political modernization and evolution and revolution in the political process of Middle Eastern states. The course will explore the primary bases of cleavage and conflict and the principal forces that shape the policies and political dynamics of the region. Crosslisted as: INTL 351.

**POLI 352. European Governments and Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A comparative study of the political systems of selected western and eastern European countries. Crosslisted as: INTL 352.

**POLI 353. Latin American Governments and Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of politics characteristic of Latin American systems, including democratic reformism, military authoritarianism and revolutionary socialism. The course also examines the contemporary problems of fledgling democracies as they cope with economic and debt crises and various opposition challenges. Crosslisted as: INTL 353.

**POLI 354. Russian and Post-Soviet Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the origins, institutions, processes and disintegration of the Soviet political system, and the ongoing reform efforts during the post-Soviet period. Special emphasis is placed on the politics of the transition to a democratic political system and a market economy. Other topics include nationality issues, social problems and foreign policy. Crosslisted as: INTL 354.

**POLI 355. Asian Governments and Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A comparative analysis of the politics and governments of major Asian states, with a focus on Japan, China and India. Crosslisted as: INTL 355.

**POLI 356. Government and Politics of Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course will introduce the student to the basic outlines of government and politics in Africa. The course will consider such topics as colonialism, elitism and nationalism and modernization strategies. Using the comparative approach, the course will primarily focus on West, East and Central Africa. Crosslisted as: AFAM 356/INTL 356.

**POLI 357. Politics of Southern Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of racial and political developments in the southern tip of Africa. While South Africa will be the primary focus of analysis, other countries in the region such as Zimbabwe, Angola and Mozambique will be studied. Crosslisted as: AFAM 357/INTL 357.

**POLI 358. Concepts of Comparative Government. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Comparative study of politics and governments. Introduces concepts and theories used in the study of political systems. Topics include democratization and democratic governance, the role of the state, one-party and military regimes, revolution, and economic and political development. Crosslisted as: INTL 358.

**POLI 359. The Politics of Developing Areas. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Analysis of the processes of political and economic development. Includes a study of various challenges facing developing countries, such as economic inequalities, environmental degradation, mass political participation, military coups, revolution and civil war. Crosslisted as: INTL 452.

**POLI 360. China in Transition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Traces how China is making the transition from a planned to market economy, and what implications this transition has on the political, social and urban landscape. Class discussions are grounded on a basic understanding of China's modern history and regional geography. Crosslisted as: INTL 480.

**POLI 361. Issues in World Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An exploration of several significant issues in world politics. Topics may include peacekeeping and collective security, international economic competitiveness, global environmental politics as well as selected others. Topics will vary with current events and trends in the international arena. Crosslisted as: INTL 361.

**POLI 362. International Organizations and Institutions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the background development structure and operations of organizations and institutions such as the United Nations, the European Community and the Organization of American States. Crosslisted as: INTL 362.

**POLI 363. U.S. Foreign Policy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An analytical survey of processes and practices in the formulation of U.S. foreign policy, including an introduction to the goals, problems of implementation and current challenges faced by policy makers. Crosslisted as: INTL 363.

**POLI 364. Vietnam. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An analysis of the complete record of the conflict in Vietnam. The primary focus will be on the period of United States involvement. The course will examine closely how and why the United States became involved in Vietnam and what impact the Vietnam war has had on political institutions and behavior. In particular, the course will examine what impact the period of U.S. involvement has had upon U.S. foreign policy. The course also will consider additional topics including: public opinion and the war, the relationship between president and Congress in light of the war and contemporary U.S. politics as a backlash against the political movements of the 1960s. Crosslisted as: INTL 364.

**POLI 365. International Political Economy. 3 Hours.**

3 lecture hours. 3 credits. A survey of both theoretical and current policy issues in international political economy. Theories to be covered include liberalism, mercantilism, Marxism, regionalism, world systems theory and others. Policy issues include differing styles of capitalism in the industrialized world, the political economy of development, the politics of international corporate alliances and others. Crosslisted as: INTL 365.

**POLI 366. Women and Global Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of women and global politics, providing both a feminist re-examination of traditional international-relations theories and a comparative analysis of the political, legal and economic status of the world's women. The impact of women on global political institutions such as the United Nations will be addressed as well as other feminist and grass roots means of taking political action. Crosslisted as: GSWS 366/INTL 368.

**POLI 367. Terrorism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HSEP 101, POLI 103 and INTL 105/POLI 105, or permission of instructor. A survey of the modern problem of terrorism with an emphasis on the political nature of terrorist acts. Examines the history of terrorism, domestically within the U.S. and internationally, the role of religion, the structures and operations of terrorist organizations, as well as counterterrorism policies and policy making. Crosslisted as: HSEP 301.

**POLI 368. Comparative National Security Policy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of national security policies and policy-making in a diverse set of nation-states. Emphasis is placed on comparing how threat perception, historical context, ideology, political structure and leadership impact national security policies of both powerful and weak nation-states. Crosslisted as: INTL 468.

**POLI 369. U.S. National Security. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of key issues in U.S. national security including national security decision-making, the use of force, military intervention, nuclear strategy and strategic arms control, ballistic missile defense, the transformation of war due to technology and globalization, defense policy, planning and budgeting, the impact of technology on strategy from airpower to cyberspace and robotics, and critical regional issues.

**POLI 370. Nonprofit Organizations and Society. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines the history and foundations of the nonprofit agency in the U.S. and abroad. Compares and contrasts relationships between business, government and the nonprofit sector. Discusses requirements for formalizing and managing nonprofit organizations from the perspectives of the volunteer board and employees. Examines issues of accountability, policy, research and resource development.

**POLI 372. Ethics, Law and Governance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines how legal, legislative and public policy issues affect the development and growth of nonprofit organizations. Examines ethical principals and legal issues related to personnel and employment, as well as the goals of advocacy and its importance to nonprofit practitioners.

**POLI 374. Financial Management for Nonprofits. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines how nonprofit organizations are influenced by prices, distribution of goods and services and the distribution of income and wealth. Topics include financial-statement analysis, time-value of money, budgeting concepts and techniques, securities valuation, long- and short-term financial planning issues and working capital management. Designed to develop skills in decision-making in financial management of the nonprofit organization.

**POLI 380. Human Security. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of the key elements of human security: the positive and negative impacts of globalization, the rise and impact of civil violence within many nations, the dilemmas of the aid industry, the impact of non-state actors, and issues related to chronic poverty, food security and water security.

**POLI 381. The Politics of Genocide and Human Rights. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of the history and causes of genocide and large-scale human rights violations of the 20th century and more recent examples. Using case studies, and focusing on the Holocaust as the paradigmatic genocide, the course studies historical events and theoretical explanations to understand why people have been so willing, in every historical era, to kill each other in large numbers.

**POLI 382. International Health. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of the basic principles of international and comparative health, as well as the national and international institutional structures in place to address health challenges. Focuses on the political, economic, social and individual burdens of inadequate health to societies and the international community. The implementation of global health programs and methods used to evaluate them are studied in detail.

**POLI 383. The Middle East and North Africa in Transition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of the political, social and economic aspects of the "new" Middle East and North Africa after what has come to be known as "The Arab Spring." Topics addressed include a historical and geographical overview of the Arab world prior to the mass uprisings, an examination of the political and economic motivations for popular unrest in several Arab countries, the role of women and youth movements as well as social media in mass demonstrations that happened in several Arab countries, the wider regional and global impact of the uprisings, and an assessment of the Arab world today.

**POLI 391. Topics in Political Science. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Maximum total of 9 credits in all departmental topics courses may be applied to the major. An intensive survey of a specialized field of political interest. See the Schedule of Classes for specific topics to be offered each semester.

**POLI 448. Scope and Method of Political Science. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: POLI 103 or permission of instructor. A comprehensive and systematic study of the philosophy of political science, various theories seeking to explain political phenomena and some of the techniques of political analysis.

**POLI 490. Senior Seminar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 24 credits in political science courses or permission of instructor. A capstone course examining the major ideas and debates in each of the four sub-fields of the discipline of political science: American government, political theory, comparative politics and international relations. Students are required to produce a research project on a critical issue in one of the sub-fields.

**POLI 491. Topics in Political Science. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Maximum total of 9 credits in all departmental topics courses may be applied to the major. An intensive survey of a specialized field of political interest. See the Schedule of Classes for specific topics to be offered each semester.

**POLI 492. Independent Study. 1-4 Hours.**

Semester course; variable hours. Variable credit. Maximum of 4 credits per semester; maximum total of 6 credits for all independent study courses. Open generally to students of only junior or senior standing who have acquired at least 12 credits in political science. Determination of the amount of credit and permission of the instructor and department chair must be obtained prior to registration of the course. An independent study course that allows a political science major or other student who meets the requirement to do research, under the direction of an instructor qualified in that area, in a subject or field of major interest.

**POLI 493. Political Science Internship. 1-6 Hours.**

Semester course; variable hours. 1-6 credits. (50 hours per credit.) May be repeated for a maximum of 6 credits. Permission of internship coordinator required. Restricted to political science majors, nonprofit management and administration minors and public management minors. Provides an opportunity to relate theory to practice through observation and actual experience within the field of political science. Graded as pass/fail.

**POLI 494. Political Science Mentorship. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. Prerequisites: 24 credits in political science courses including POLI 103, 105, 107 and 109, permission of instructor, and 3.3 GPA in POLI courses. May be repeated for a maximum of 6 credits. A mentorship course that allows students to develop advanced research skills, to experience managing a classroom and to present the results of their research in a classroom setting. Different sections of the course specialize in different subfields of political science: U.S. government, comparative politics, international relations and political theory.

**Portuguese (PORT)****PORT 101. Elementary Portuguese. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4, 4 credits. Prerequisite: completion of PORT 101 to enroll in PORT 102. Elementary grammar, reading and oral skills.

**PORT 102. Elementary Portuguese. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4, 4 credits. Prerequisite: completion of PORT 101 to enroll in PORT 102. Elementary grammar, reading and oral skills.

**PORT 201. Intermediate Portuguese. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Continuation of the essentials of grammar, with emphasis on achieving proficiency in aural comprehension, speaking, reading and writing skills.

**PORT 202. Intermediate Portuguese Readings. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PORT 201. Designed to increase the student's proficiency through the study of selected cultural and literary texts.

**PORT 391. Topics in Portuguese. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated with different topics for a maximum of 12 credits. Prerequisite: PORT 202. An in-depth study of selected topics in Portuguese. See the Schedule of Classes for specific topic to be offered each semester.

**Psychology (PSYC)****PSYC 101. Introduction to Psychology. 4 Hours.**

Semester course; 3 lecture and 1 computer-assisted instructional hours. 4 credits. A survey of the basic principles, methods of investigation and fields of study and application. Includes individualized application of principles and methods in computerized learning activities. This course is a prerequisite for upper-level work in the field of psychology.

**PSYC 201. Career Development in Psychology. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: PSYC 101. Introduction to the discipline of psychology and the career alternatives available in various specialties. Self-assessment, career decision-making skills, educational program planning methods will be covered. Special topics will include graduate/professional school options, opportunities for minority students and job search strategies for the B.A. or B.S. psychology major.

**PSYC 214. Applications of Statistics. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: PSYC 101 and STAT 210 both with a minimum grade of C. Frequency distributions, measures of central tendency and variability; sampling, probability, correlation and significance tests as applied in psychological data.

**PSYC 301. Child Psychology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. A study is made of the growth and development of the child until puberty. Childlike is viewed in terms of physical, mental, social, emotional and educational factors. PSYC 304 Life Span Developmental Psychology also may not be taken for credit.

**PSYC 302. Psychology of Adolescence. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PSYC 101. A study of mental, moral, social and physical development from puberty to maturity viewed as in child psychology. Designed for secondary school teachers, youth leaders and professional psychologists.

**PSYC 303. Personal Adjustment. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Surveys major theories of personality as a basis for studying theory, research and intervention into areas that require personal adjustment. Such areas include sense of self, stress and coping, work and career and several varieties of interpersonal relationships. Positive adjustment and growth as well as problems are discussed.

**PSYC 304. Life Span Developmental Psychology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Reviews the basic concepts and principles of physical, cognitive and social development at each major stage of life-prenatal, infancy, toddlerhood, preschool, middle childhood, adolescence, adulthood and old age. Consideration is given to the study of development at each stage of life and to different theoretical explanations for development. PSYC 301 Child Psychology may not also be taken for credit.

**PSYC 305. Educational Psychology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. The application of psychological principles to the teaching-learning process with special emphasis on theories of learning and development. Crosslisted as: EDUS 305.



**PSYC 306. Psychology of Adult Development. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. The life stages and transitions of the young adult, middle age and young-old phases of the life cycle are considered, following a review of methods of research within life-span development psychology. Topics include the impact of events such as birth of the first child, job relocation, mid-life re-evaluation and anticipated retirement.

**PSYC 307. Community Solutions: Multiple Perspectives. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Explores possibilities for addressing social concerns of the Richmond community by understanding the complex nature of social issues as essential to their successful amelioration via perspectives of life and social sciences. Toward this end, expertise from the social sciences, the life sciences and the community are integrated. Includes a service-learning experience (a 20-hour volunteer requirement). Crosslisted as: LFSC 307.

**PSYC 308. Stress and its Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Physiological and psychological aspects of stressors and the stress response. Review of principles, research and methods of stress management, such as relaxation, self-suggestions, meditation and biofeedback.

**PSYC 309. Personality. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. The study of the various approaches to understanding human behavior in terms of personality theory. Various theories will be examined for commonality and uniqueness in assumptions, dynamics and development of personality.

**PSYC 310. Industrial Psychology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Application of psychological principles and techniques to problems in personnel management and human engineering; recruitment, selection, training and placement in industry; criteria in testing and test development; morale evaluation and improvement, employee counseling; work-management communications; human engineering in equipment design, quality control, working conditions and safety.

**PSYC 317. Experimental Methods. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: PSYC 214 with a minimum grade of C. Introduction to experimental procedures and laboratory techniques in psychology. Demonstrations and experiments in sensation, perception, learning, emotion and motivation.

**PSYC 318. Principles of Psychological Tests and Measurements. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: minimum grade of C in PSYC 101 and minimum grade of C in STAT 210. Concepts in psychological measurement and a survey of commonly used tests; testing procedures and rationale underlying these tests; tests of intelligence, aptitude, achievement, interest and personality critically examined, procedures described for selecting and evaluating specific group tests in these areas.

**PSYC 321. Social Psychology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Survey theory and research in social psychology. Topics include interpersonal and social influence processes, attitudes and social cognition, the impact of personality on social behavior, conformity, leadership and small group behavior.

**PSYC 322. Personality and Behavior of the African American. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. A study of personality factors such as motivation, ego-functioning and the socialization processes, with special emphasis on living conditions of African-Americans. Crosslisted as: AFAM 322.

**PSYC 323. Interpersonal Relations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Analyzes human relations from various theoretical perspectives. Typical topics include the effects of attraction, friendship, love and dependency on relationships; the evolution of relationships from initiation through termination. Strategies for increasing effectiveness of communication between individuals also are addressed.

**PSYC 333. Psychology and Religious Experience. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Religious belief and experience as viewed by major psychological theorists. How psychological methodology has been used to study religious experience. Topics include personality factors and development, conversion experiences, religious experiences and mental health and human values. Crosslisted as: RELS 333.

**PSYC 335. Psychology of Women. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Overview of issues in psychology relevant to women. Topics include: research methods of women's issues; sex-role socialization; women and hormones; psychological androgyny; personality theory and counseling strategies for women; women and language; women and violence; and rape and abuse. Crosslisted as: GSWS 335.

**PSYC 340. Introduction to the Helping Relationship. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Overview to the dynamics of communication in a helping relationship. Didactic material includes the principles of empathy, nonverbal behavior, problem-solving, crisis intervention and interview techniques. Basic paraprofessional counselor skills will be demonstrated and practiced through structured exercises.

**PSYC 341. Group Dynamics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Social and psychological principles and research related to the individual in groups. Specific topics include motivation for individuals forming and joining groups, performance and productivity of group members, group leadership and majority and minority influence. The group will be examined in relation to the larger society and as a subculture in itself. Crosslisted as: SOCY 341.

**PSYC 401. Physiological Psychology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Data from the fields of anatomy and physiology are presented, and their implications for psychology are discussed. The central nervous system, internal environment, vision, audition, reflexes, emotion, learning behavior disorders and their physiological components. Behavior of the human organisms is studied from the biopsychological point of view.

**PSYC 404. Social Psychology of Emotions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PSYC 101, SOCY 101. An examination of the social shaping of emotion as well as its function in maintaining the social process. Cross-cultural uniformities and diversity in basic emotions and their expression are addressed as well as selected social psychological theories of emotions. Crosslisted as: SOCY 404.



**PSYC 406. Perception. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Perception of information from sensory systems with concentration on vision and hearing. Research and theories on how we learn and judge color, form, movement, depth and how individuals integrate these in object identification.

**PSYC 407. Psychology of the Abnormal. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Development of personality is discussed, with emphasis on factors leading to maladjustment. Lectures and reading cover the symptom groups of emotional disorders of both psychological and organic origin. Methods of assessing and treating these disorders are surveyed.

**PSYC 410. Principles of Learning and Cognition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Comprehensive treatment of learning and cognition with emphasis on humans, from behavioral, cognitive, biological and developmental viewpoints. Topics include conditioning, information processing, memory, sociobiology and cognitive and moral development.

**PSYC 412. Health Psychology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Application of the principles and techniques of psychology to the field of medicine, to health maintenance and to illness. The integration of theoretical, research and applied issues is emphasized in the analysis of such topics as psychological/behavioral factors contributing to and protecting against physical illness (stress, smoking, exercise), factors relating to treatment and recovery (coping, treatment compliance), psychological problems resulting from illness and injury, and specific techniques and problem areas in health psychology (such as biofeedback, pain management, pediatric psychology, geropsychology, rehabilitation psychology and lifestyle change.).

**PSYC 414. Psychology of Women's Health. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Overviews the psychological research on women's health. Topics include health behavior change, personality and individual differences, cognitive factors, disease-specific behaviors and interventions. Crosslisted as: GSWS 414.

**PSYC 426. Child Psychopathology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PSYC 101. Principal childhood behavioral abnormalities. A review of causes, assessment and diagnostic methods, and treatment, intervention and prevention approaches.

**PSYC 451. History of Psychology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PSYC 101 and senior standing. Traces the history of ideas about mind and behavior as they relate to the theory and practice of psychology.

**PSYC 491. Topics in Psychology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Maximum total of 6 credits in topics courses. Prerequisite: PSYC 101. An in-depth study of selected topics and issues in psychology. See the Schedule of Classes for specific topics to be offered.

**PSYC 492. Independent Study. 1-3 Hours.**

Semester course; variable hours. 1, 2 or 3 credits per semester. Maximum of 6 credits for all independent study courses. PSYC 492, PSYC 493 or PSYC 494 may be repeated for a total of 6 credits but a maximum of 12 credits total for all three courses. Prerequisite: PSYC 101. Open only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration of the course. Independent study is defined as student-conceived and initiated readings or research project which is supervised by a psychology faculty member. An oral examination or written, comprehensive paper is required at the end of the semester.

**PSYC 493. Fieldwork: Human Services. 3 Hours.**

Semester course; 3 credits. PSYC 492, PSYC 493 and PSYC 494 may be repeated for a total of 6 credits but a maximum of 12 credits total for all three courses is allowed. Prerequisite: permission of instructor. Students are placed in an agency, which will provide supervised work experience in various aspects of helping other people. The setting might be a government or private community agency, or a corporation, depending on the student's goals. The student works eight hours per week at the placement site, attends several group discussion sessions during the semester and completes written assignments. This course is designed to enhance the psychology major's career pursuits for either graduate-level training or post-baccalaureate employment.

**PSYC 494. Research Internship in Psychology. 1-3 Hours.**

Semester course; variable hours. 1, 2 or 3 credits per semester. May be repeated for a maximum of 6 credits with adviser's approval. PSYC 492, PSYC 493 or PSYC 494 may be repeated for a total of 6 credits but a maximum of 12 credits total for all three courses. Prerequisites: PSYC 101 and permission of faculty research supervisor must be obtained prior to registration. PSYC 214 and PSYC 317, or permission of supervisor. Students will work on various phases of a research project (design, data collection, data analysis, manuscript writing) under a psychology faculty member's close supervision. This course is designed to enhance the psychology major's career pursuits for either graduate-level training or post-baccalaureate employment.

**PSYC 497. Honors in Psychology I. 3 Hours.**

Semester course; variable hours. 3 credits. Prerequisites: PSYC 317 (co-requisite with permission) and admission to the honors in psychology program. First in a three course sequence to develop, execute and defend an empirically based thesis in psychology. Students will work with a mentor to develop ideas into a tangible research project, working toward a proposal.

**PSYC 498. Honors in Psychology II. 3 Hours.**

Semester course; variable hours. 3 credits. Prerequisite: PSYC 497 with a grade of A. Students will refine research ideas developed in PSYC 497 into a formal proposal document with introduction, method and proposed results. Students are expected to propose the thesis to their committee members no later than the second week of this course and begin data collection thereafter.

**PSYC 499. Honors in Psychology III. 3 Hours.**

Semester course; variable hours. 3 credits. Prerequisite: PSYC 498 with a grade of A. Students will complete the research project developed in PSYC 497 and 498 and generate the final thesis, including introduction, method, results and discussion. Students must orally defend the thesis to their committee members by the end of this course with time for revisions to be submitted within the semester's defined grading period.

## Religious Studies (RELS)

### RELS 101. Introduction to Religious Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course examines the phenomenon of religion and religious experience. Through a phenomenological approach definitions and descriptions of the major features of the religious experience and of religious establishments, including concepts of the sacred, the numinous, religious language, texts, symbols, rituals and myths are reviewed. In addition, the social, political and spiritual dimensions of religion in human culture will be investigated.

### RELS 108. Human Spirituality. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the manifestations of one or more of the themes of religious studies in a diverse group of religious communities. The themes may include such wide-ranging topics as the sacred and profane, the epistemology of faith and knowledge, creation stories, human identity, the nature of the divine, the possibility of liberation or salvation, mythology, ritual, ethics, religion and art, religion and law, and religion and politics.

### RELS 201. Biblical Hebrew. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Vocabulary, elementary grammar, introduction to lexica and reading of biblical texts.

### RELS 202. Biblical Hebrew. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: RELS 201. Vocabulary, elementary grammar, introduction to lexica and reading of biblical texts.

### RELS 250. Death: Myth and Reality. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of intellectual and emotional responses to death and dying with emphasis upon their role in the development of religious thought and practice. Special attention will be paid to the death theme in literature, funeral practices and beliefs concerning the afterlife in selected world religions.

### RELS 280. Introduction to Catholic Studies. 3 Hours.

Semester course; 3 lecture hours. 3 credits. This course provides an introduction to Catholicism's major doctrines, figures, historical events, philosophy and ethics from its beginnings in the first centuries of the Common Era through contemporary debates over such issues as abortion, sexuality and war. Students will learn about scripture, doctrine, theology, the sacraments, art and architectures, saints, social justice and gender, and the history and role of the Church.

### RELS 282. Introduction to Buddhism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Introduces Buddhism from its origins in India and addresses its major schools of thought, practice, ritual and philosophy, in Asia and beyond, particularly the United States.

### RELS 291. Topics in Religious Studies. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated with different topics for a maximum of six credits. Focused study of selected ideas, institutions, movements, time periods and/or thinkers. See Schedule of Classes for specific topic to be offered each semester.

### RELS 301. Introduction to the Hebrew Bible. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the Hebrew Bible from its beginning through the post-Exile period. Emphasis given to the literary and historical development of the text.

### RELS 302. Introduction to the New Testament. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the New Testament with particular emphasis given to the historical development of the Canon.

### RELS 303. Intertestamental Literature and Thought. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The period between the Old and New Testaments as seen through the literature of the era, with emphasis on the writings of the Apocrypha, Pseudepigrapha and Josephus.

### RELS 305. Hebrew Prophets. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the literature and history of Israel as seen through the work of the writing prophets. Emphasis will be placed on the second part of the Hebrew Canon and the Book of Daniel.

### RELS 306. Introduction to Judaism. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A general survey of the dynamics and characteristic patterns of Jewish civilization encompassing history, practices and beliefs. Crosslisted as: INTL 306.

### RELS 307. Black Religion. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An analysis of the role of religion in the lives of blacks with an emphasis on African religions and philosophies, the black church in America, and the roles of the various faiths, sects and cults. Crosslisted as: AFAM 307/INTL 307.

### RELS 308. High and Later Middle Ages. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A detailed historical overview of developments in Western Europe from the end of the first millennium through the end of the 15th century. Crosslisted as: HIST 311.

### RELS 310. Mediterranean Religions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Explores the earliest evidence of religious practice and belief in the Mediterranean region and probes the ways that the ancient traditions shaped the religions that still endure today. Also investigates the effect of religion in the Mediterranean region on related issues of intercultural relations, peace and conflict, and migration.

### RELS 311. Religions of the World. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An investigation of the historical, cultural and theological foundations and development of major world religions including Hinduism, Buddhism, Confucianism, Taoism and Shinto. Crosslisted as: INTL 311.

### RELS 312. Religions of the World. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An investigation of the historical, cultural and theological foundations and development of major world religions including Zoroastrianism, Judaism, Christianity and Islam. Crosslisted as: INTL 312.

### RELS 313. Life and Literature of Paul. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of the life and literature of Paul as given in Acts and the Epistles, involving special consideration of Paul's contribution to the expansion of Christianity.

### RELS 314. Jesus in the New Testament. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the Christ of faith and the Jesus of history as presented in New Testament literature and as interpreted in the works of selected scholars from the church fathers to the present.

### RELS 315. The Ancient Near East. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of the ancient Near Eastern civilizations from the preliterate period to the end of Kassite rule in Babylonia (c. 1160 B.C.). Crosslisted as: HIST 301.

**RELS 317. Islam. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the emergence of Islam in Arabia in the seventh century and its subsequent developments, including a look at the Qur'an (the holy book), the Prophetic traditions, the concept of God, and mysticism (sufism) and law (shari'ah) and an overview of ritual practices, fundamental beliefs, theological principles and current issues in Islam and international relationship. Crosslisted as: INTL 317.

**RELS 318. History of the Jewish People I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the Jewish people from the biblical period to the early modern period, including the Israelite conquest of Canaan, Judea in Hellenistic and Roman times, the Diaspora in Islam and in Europe, social and cultural trends, and Jewish settlement in the Ottoman Empire. Crosslisted as: HIST 333.

**RELS 319. History of the Jewish People II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the Jewish people from the early modern to the present, including the impact of the Emancipation, the rise of the American Jewish community, the impact of modernism and growth of Reform, the beginnings and growth of Zionism, restoration in Palestine, the Holocaust, the creation of Israel, and the relations of Israel and world Jewry. Crosslisted as: HIST 334.

**RELS 320. Taoism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of one of the most fundamental and influential philosophies of life in Chinese culture, focusing on the theory and practice of the basic principles of Taoism as formulated by the legendary Lao Tzu and further developed by Chuang Tzu.

**RELS 322. Tibetan Buddhism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A basic introduction to the history, development and mythology of the Buddhism of Tibet focusing on the Indian heritage and shared basis of all Buddhist practices, a clear identification of the three vehicles found in Buddhism, and a careful consideration of the path of the Bodhisattva, the hero of Great Vehicle Buddhism. Crosslisted as: PHIL 322.

**RELS 326. Existentialism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 3 credits in philosophy (exclusive of logic) or permission of instructor. An examination of the nature of truth, freedom, responsibility, individuality and interpersonal relations as found in some principal writings of Kierkegaard, Nietzsche, Jaspers, Sartre, Heidegger, Camus, Buber and Marcel. Crosslisted as: PHIL 326.

**RELS 327. History of Christianity I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A historical and theological examination of Christianity from its origin to the early modern period, or the age of the Reformations. Emphasis is placed upon an understanding of leading events, ideas, movements and persons in their historical settings. Crosslisted as: HIST 335.

**RELS 333. Psychology and Religious Experience. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Religious belief and experience as viewed by major psychological theorists. How psychological methodology has been used to study religious experience. Topics include personality factors and development, conversion experiences, religious experiences and mental health and human values. Crosslisted as: PSYC 333.

**RELS 334. Religion in Contemporary America. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course studies the history, literature, belief patterns and unique traits of religion in the United States. The evolution of religion and religious sentiment in a modern pluralistic, democratic society, including the varieties of religious experiences in contemporary America will be reviewed.

**RELS 335. The American Jewish Experience. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The religious, social and cultural structure of American Jewry from the Colonial era to the present.

**RELS 336. Religions in Latin America. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An interdisciplinary survey of the major religious groups of Latin America, with a focus on the development of Catholicism, Protestantism and the traditions of the African diaspora, such as Santeria and Voduo, during the 20th century.

**RELS 337. Contemporary Cults and New Religious Movements. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An overview of contemporary religious movements. Focuses on new groups that have emerged in the context of globalization. Involves understanding of what gives rise to these movements, how they are distinctive and how they develop.

**RELS 340. Global Ethics and the World's Religions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A critical survey of ethical concepts and issues in the thought and practice of major religious traditions. Comparison of ethical perspectives on selected themes and attention to cooperative efforts toward a global ethic. Crosslisted as: INTL 341.

**RELS 350. World Classics of Spirituality. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A critical reading of selected works from among the spiritual classics of Judaism, Christianity, Islam, Hinduism, Taoism and other religious traditions. Crosslisted as: INTL 360.

**RELS 360. Sociology of Religion. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A systematic review and assessment of major sociological theories of and empirical research on religious behavior and groups. Topics include the structure of religious organizations; social correlates and functions of religion; denominationalism; religion and social class, social change and population. Crosslisted as: SOCY 360.

**RELS 361. The Bible as Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Literary aspects of the Bible will be considered. Also, attention will be given to the history of the English Bible. Crosslisted as: ENGL 361.

**RELS 362. Shakespeare and Religion. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of the religious ideas in selected plays by William Shakespeare and their relevance to contemporary religious thought and experience. Topics include the nature of God, the meaning of life, the problem of evil, moral authority and the question of immortality as found in Shakespeare's plays.

**RELS 363. Archaeology and Sacred Texts. 3 Hours.**

Semester course; 3 lectures hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Explores past and present archaeological research as it relates to events, persons, and places described in ancient sacred texts of the Mediterranean.

**RELS 371. Women in Islam. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200, RELS 108, GSWS 201 or ENGL 215. Critical study of the roles and rights of women in Islam. Crosslisted as: GSWS 371.

**RELS 372. Global Women's Spirituality. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Explores the spiritual writings of women in various cultures and religious traditions. Crosslisted as: GSWS 372/INTL 372.

**RELS 373. Gender and the Bible. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 108 or GSWS 201 or RELS 301 or RELS 302; and ENGL 215 or UNIV 200 or HONR 200. Studies the Hebrew and Christian scriptures with emphasis on gender. Attention to traditional, feminist, womanist and postcolonial interpretation. Crosslisted as: GSWS 373.

**RELS 380. Contemporary Catholic Thought. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: RELS 280. A study of the contemporary Catholic Christian response to the questions, "Who is God?" and "Where/how do we experience the Sacred?" Methods of Catholic theology will be explicated and applied to the teachings of the Second Vatican Council and current responses to those teachings in such areas as sacramental worship and liturgy, and moral/ethical teachings of the Church.

**RELS 391. Topics in Religious Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of 6 credits. A study of a selected ideas or concepts, religious thinkers or significant movements in the field of religion. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**RELS 401. Faith and Life Sciences. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Open to students of any school or program. Explores the complex relationships between faith traditions and the life sciences. Topics include epistemology, impact of life sciences on ideas of fate and responsibility, limits of science and technology, and scientific and religious perspectives on human origins, consciousness, aggression, forgiveness, health, illness and death. Crosslisted as: LFSC 401.

**RELS 407. Modern Jewish Thought. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of the writings of the leading Jewish thinkers of the 19th and 20th centuries. Special reference will be made to the issues arising from the encounter of Judaism with the modern world: the nature of revelation and the authority of the Torah, the nature of God, the impact of the Holocaust, the meaning of redemption and the significance of the state of Israel.

**RELS 408. Indian Tradition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: at least six credits from philosophy or religious studies courses. A systematic analysis of the major theories of Indian religious and philosophical thought: Vedas, Upanishads, Gita, Charvaka, Jainism, Buddhism, the six systems of Hinduism and contemporary developments. Crosslisted as: PHIL 408.

**RELS 409. Modern Islamic Thought and Global Trends. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL/RELS 312 or INTL/RELS 317; UNIV 200 or HONR 200. Introduces students to the integral relationship of Islam to major events of global concern and contextualizes these events into the wider modern and postmodern developments of Islamic thought and its intellectual and ideological self-interrogation. This course will provide students with the opportunity to study both the background of modern Islamic thought and selected contemporary events. Crosslisted as: INTL 409.

**RELS 410. The Chinese Tradition in Philosophy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the development of Confucianism, of alternative ways of thought prior to the fall of the Han Dynasty and of neo-Confucianism. The systems of thought are examined in the light of their social, political and religious impact on China, Korea and Japan. Crosslisted as: PHIL 410/INTL 410.

**RELS 412. Zen Buddhism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of Zen Buddhism, including backgrounds in Indian philosophy and practice, development in China and Korea, and present-day Zen theory and practice in Japan and in Western countries. Crosslisted as: PHIL 412/INTL 412.

**RELS 422. Religion and Film. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different themes for a total of six credits. Prerequisite: UNIV 200 or HONR 200. Explores central themes present in all global religious traditions, such as ritual, faith, myth, suffering, redemption, the religious quest/pilgrimage, the nature of good and evil and perceptions of the sacred. Using readings from sacred texts and contemporary film critiques, the course juxtaposes ancient story and wisdom with contemporary narratives in film. Possible themes would include women and religion in world cinema, Christology in world cinema, and violence and redemption in film.

**RELS 425. Religion, Magic and Witchcraft. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103 and UNIV 200 or HONR 200 with a minimum grade of C. A survey of the nature and variety of beliefs outside of the major streams of religious thought. Among topics considered are myth, totemism, taboo and sorcery. Emphasis on understanding supernatural beliefs and practices in relation to culture and society. Crosslisted as: ANTH 425/INTL 425.

**RELS 430. Philosophy of Religion. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 3 credits in philosophy (exclusive of PHIL 211 and PHIL 212) or permission of instructor. An introduction to the major problems and questions of religion and reason. Special reference will be made to the nature of God, the nature of man, the problem of evil, the source of good, immortality and the basis of authority. Crosslisted as: PHIL 430.

**RELS 440. Mysticism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A critical analysis of the varieties of mysticism in world religions. Arguments for and against mysticism will be emphasized. Mysticism will be related to art, psychology, science, philosophy, theology and magic. Crosslisted as: PHIL 440.

**RELS 441. Islamic Mysticism: the Sufis. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL/RELS 312 or INTL/RELS 317; UNIV 200 or HONR 200. Introduces students to the major Sufi masters and their works. It covers ideological and practical development of Islamic mysticism as compared to the developments within Islam itself. Crosslisted as: INTL 441.

**RELS 442. Seminar in Hinduism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of Hinduism, taking up the earliest origins of Hinduism, the Hindu creation myth, the various conceptions of the divine, the speculation regarding human nature, the stages of life, development of family and monastic codes, the great epics of Hinduism including the Bhagavad-Gita, the six schools of Hindu philosophy and modern Hinduism as it has developed in response to Western influences.



**RELS 450. Religion, Globalization and Social Justice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 340/INTL 341, WLRD 210 or WRLD 220; UNIV 200 or HONR 200. Explores the role religions are playing in the work of building a socially just and environmentally sustainable world community. Crosslisted as: INTL 449.

**RELS 451. Religion, Racism and Social Justice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 340/INTL 341, WLRD 210 or WRLD 220; UNIV 200 or HONR 200. Explores the complex history and contemporary relationships between religion, racism and social justice. Crosslisted as: AFAM 451/INTL 451.

**RELS 453. Western Religions, Women and Social Justice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 or HONR 200; and RELS 108, GSWS 201 or WRLD 210. Explores the experience and portrayal of women in the three Abrahamic traditions: Judaism, Islam and Christianity. Study focuses on how these religions and their texts bear upon the social, economic, political and spiritual lives of women. Special attention is given to the impact of globalization and religious fundamentalism on women. Crosslisted as: GSWS 453/INTL 453.

**RELS 455. Catholic Ethics and Social Justice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 280 or 380, or RELS/INTL 312, or RELS 340/INTL 341; UNIV 200 or HONR 200. An exploration of the Catholic church's major theological, ethical, constitutional and strategic concerns, and an analysis of Catholic social teaching and its relation to current social issues such as abortion, peace and conflict, poverty, and human rights. Crosslisted as: INTL 456.

**RELS 490. Senior Capstone Seminar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: RELS 340/INTL 341; senior standing in religious studies major with a minimum of 85 credits earned toward the degree. Senior research project; written thesis and oral presentations using established concepts, theories and research methods in religious studies. Students will select the religious groups/traditions as the focus of their research, writing and oral presentations in consultation with the course instructor.

**RELS 491. Topics in Religious Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of 6 credits. Prerequisite: written permission of instructor. An in-depth study of selected ideas or concepts, religious thinkers or significant movements in the field of religion. See the Schedule of Classes for specific topics to be offered each semester.

**RELS 492. Independent Study. 1-4 Hours.**

Semester course; variable hours. Variable credit. Maximum of 4 credits per semester; maximum total of 6 credits for all independent study courses. Open generally to students of only junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration of the course. An independent study course to allow interested students in religious studies to do research in an area of major interest under the direction of a professor qualified in that field.

**RELS 493. Religious Studies Internship. 1-3 Hours.**

Semester course; variable hours. 1-3 credits (40 clock hours per credit). May be repeated for a maximum of 6 credits, however only 3 credits can count toward the major. Prerequisites: completion of 9 credits of upper-level (300- or above) course work in religious studies, and permission of the internship coordinator. Student must be in good academic standing with a minimum major GPA of 2.25. Designed for the advanced student to gain workplace experience in a local, national or international organization offering opportunities in religious studies.

**RELS 499. Senior Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisites: RELS 340/INTL 341; senior standing in religious studies major with a minimum of 85 credits earned toward the degree. Pre- or corequisite: RELS 490. Focuses on self-assessment, compilation of a portfolio and curriculum vitae, career and graduate school preparation, and on the lifelong application of skills and knowledge acquired in the program. Students will critically assess their experience in the religious studies program.

**Russian (RUSS)****RUSS 101. Elementary Russian. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of RUSS 101 to enroll in RUSS 102. Elementary grammar, reading and oral drill.

**RUSS 102. Elementary Russian. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of RUSS 101 to enroll in RUSS 102. Elementary grammar, reading and oral drill.

**RUSS 201. Intermediate Russian. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: RUSS 102. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading and writing skills.

**RUSS 202. Intermediate Russian Readings. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: RUSS 201. Designed to increase the student's proficiency through the study of selected cultural and literary texts.

**RUSS 205. Intermediate Russian Conversation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: RUSS 201. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues and free conversation.

**RUSS 311. Conversation and Media. 3 Hours.**

Semester course; 3 semester hours. 3 credits. May be repeated for up to six credits with permission of the instructor. Prerequisite: RUSS 202 or 205. Conducted in Russian. An introduction to everyday life in Russia and topics of current interest. Students will explore diverse media to develop skills in listening, speaking, reading and writing.

**RUSS 330. Literature and Culture: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated for up to six credits with different topics. Prerequisite: RUSS 202 or 205. Conducted in Russian. Students will examine salient themes in Russian culture as expressed in a range of classic and contemporary texts. This course develops skills in reading, writing, speaking and listening. See the Schedule of Classes for specific topic to be offered each semester.

**RUSS 422. Russian Film. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits with the permission of the instructor. Prerequisite: completion of six credits of Russian at the 300-level. Conducted in Russian. While the course is designed to develop the student's conversational skills in Russian, it will also provide practice in reading, listening and writing. Discussions will center on films from the Soviet and post-Soviet periods.

**RUSS 491. Topics in Russian. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated with different topics for maximum of 9 credits. An in-depth study of selected topics in Russian. See the Schedule of Classes for specific topics to be offered each semester.



## Science, Technology and Society (SCTS)

### **SCTS 200. Science in Society: Values, Ethics and Politics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An interdisciplinary introduction to the ethical, social and political dimensions of science, technology and medicine examined through case studies and debates.

### **SCTS 300. Introduction to Science and Technology Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to the study of science, technology and medicine from political, sociological and historical perspectives, focusing on case studies that illustrate the methods and theories used to examine the structure and behavior of the scientific community and the role of scientific knowledge in shaping public culture. Crosslisted as: GVPA 399/HIST 399.

### **SCTS 301. Illness Narratives. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An overview of the history, interpretations and practices of reading and writing illness narratives — through case studies and theoretical perspectives, in fictionalized and nonfiction accounts, from the viewpoint of various actors (doctors, patients, patient families and their caregivers). Students will further examine the role of narrative knowledge in health care. Crosslisted as: ENGL 369.

### **SCTS 305. Contemporary Issues in STEM Fields. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Repeatable for a maximum of 3 credits. Examines contemporary topics in STEM (science, technology, engineering and mathematics) fields through the available public lecture events which take place on the VCU campus during a given semester. Lecture topics will vary from semester to semester but all will discuss recent work and broader issues related to science, technology, engineering, mathematics and medicine.

### **SCTS 392. Revolutions in Science I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of the history of science from the ancient Greeks to 1800, focusing on the development of scientific ideas, practices and institutions in Western society. Crosslisted as: HIST 392.

### **SCTS 393. Revolutions in Science II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of the history of science from 1800 to the present, focusing on the development of scientific ideas, practices and institutions in Western society. Crosslisted as: HIST 393.

### **SCTS 397. Genetics and Society: 1865 to the Present. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An investigation of the science and technology of heredity in its historical, cultural and political contexts, emphasizing the ways in which genetic theories have been applied in attempting to solve social and biological problems. Crosslisted as: HIST 397.

### **SCTS 398. History of Medicine and Public Health: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different thematic content for a maximum of six credits. Studies in selected topics in the history of medicine, medical science or public health. Includes introduction to the interdisciplinary approaches practiced in the history of medicine as well as the historical content and relevant analytical skills needed to examine the specific course theme. Crosslisted as: HIST 398.

## Social Science (SOCS)

### **SOCS 291. Issues in Social Science. 1-3 Hours.**

Semester course; variable hours. 1-3 credits per semester. Maximum total of 6 credits. An interdisciplinary course structured around social issues pertinent to today's society. See the Schedule of Classes for specific topics to be offered each semester and the semester credit for which each course will be offered.

### **SOCS 302. Diverse Families and Children in the United States. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Focuses on the diversity of family life in the United States. Students are encouraged to analyze and appreciate the differences that emerge from such factors as socioeconomic status, race and ethnicity (language, religion, national origin). Attention is given to the variations and commonalities in how parents teach, guide and influence children and adolescents.

### **SOCS 303. Marriage and Family Relationships. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of instructor. Marriage and the family in contemporary society. Topics discussed will include the effects of masculine and feminine roles on marital and parent-child relationships, how role problems are resolved, sexual adjustments, financial adjustment, family planning and retirement.

### **SOCS 330. The Psychology and Sociology of Death. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101 or SOCY 101. An interdisciplinary study of the encounter with death, death and personality, the organizational processing of death and demographic regularities of dying. Sociologists and psychologists jointly teach the course.

### **SOCS 340. Human Sexuality. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the variety of the forms, sources and consequences of human sexual behaviors and the attitudes, beliefs and values associated with them. The data and its analysis are directed to the significance of sex in human experience.

### **SOCS 350. The Construction of Culture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination, using methods from several disciplines, of the ways in which human beings construct the shared meanings that constitute culture.

### **SOCS 389. AIDS: Myths and Realities. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Presents the students with the fundamentals of infectious disease, immunology and virology as they apply to HIV disease. Students will trace the psychosocial impact the HIV pandemic has had on society since the early 1980s, and will explore the future possibilities for those who are HIV infected and/or HIV affected.

## Sociology (SOCY)

### **SOCY 101. Introduction to Sociology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to the study of human society. The basic concepts of society and culture and their relationships to each other are studied and then used to analyze the major social institutions.

### **SOCY 104. Sociology of Racism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The course will explore the direct and indirect ways in which racial attitudes are acquired, their effect on the individuals and society, and the institutional and ideological manifestations of racism as a "faith system," as exploitation, and as a form of human conflict. The central focus of interest will be on black-white relationships. Crosslisted as: AFAM 104.

**SOCY 202. Foundations of Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. An introduction to classical theoretical traditions that have guided sociological work. Classical theorists whose writings have shaped the discipline will be studied, including Karl Marx, Max Weber, Emile Durkheim, Georg Simmel, W.E.B. Du Bois and Charlotte Perkins Gilman. This course also traces the historical development of the discipline of sociology during the 19th and early 20th centuries.

**SOCY 206. African American Family Relationships. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Focuses on the African-American family from the 1940s to the present. Examines the values and the interpersonal/role relationships that are involved in forming and maintaining African-American families in the contemporary United States. Topics include dating and sexual relationships, marital relationships, parent-child relationships and relationships with members of the extended family. Crosslisted as: AFAM 206/GSW 206.

**SOCY 302. Contemporary Social Problems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. The examination from a sociological perspective of contemporary social problems such as population growth, crime, racism, family problems, substance abuse and aging in terms of their impact on American social institutions and values.

**SOCY 303. Sociology of Deviance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. An analysis of the relationship between social structure, social control and patterns of social deviance; a survey and critique of present social theories in light of empirical research and application of the theories to selected problem areas.

**SOCY 304. Sociology of Families. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or ANTH 103/INTL 103. The family in its social and cultural context. Analysis of child rearing, marriage, kinship, family crises and family change in various societies around the world. Crosslisted as: ANTH 304/GSW 304.

**SOCY 305. African American Family in Social Context. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A socio-historical examination of the development of the family system of Americans from Africa. Focuses on large-scale (macro level) processes such as changes in the major mode of economic production and in political systems and the corresponding changes in black family structure and functioning. Presents the theoretical material on African-American families and social change that prepares students for further study of the family as a social institution and for the study of family policy. This course is designed to meet the needs of upper-division social science majors. Crosslisted as: AFAM 305/GSW 305.

**SOCY 307. Sociology of Food. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Examines the role food plays in shaping cultures, societies and social inequalities by examining the modern food system, social inequalities surrounding food access and alternatives to the current system.

**SOCY 310. Social Movements and Social Conflict. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Theory and practice of social movements, community organizing and other forms of collective behavior.

**SOCY 315. Sociology of Education. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Analysis of education as a social institution in the societal context. Cross-cultural comparative perspectives on education.

**SOCY 320. Research Methods in the Social Sciences. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Current methods of research in the social sciences. Includes a brief introduction to the use of SPSS for storage, retrieval and exploration of social science data. Crosslisted as: POLI 320.

**SOCY 321. Sociology of Economic Inequalities. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Analysis of social mobility, class, status and power.

**SOCY 322. Sociology of Race and Ethnicity. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A study of the various racial, religious and ethnic minority groups. Issues of power, pluralism and assimilation are addressed as well as the relationship between subcultures and the dominant culture.

**SOCY 325. Analysis of Sociological Data. 2 Hours.**

Semester course; 1 lecture and 2 laboratory hours. 2 credits. Prerequisites: POLI/SOCY 320 and STAT 210. Statistical techniques used in the analysis of data from sample surveys and censuses, including tabular, graphical and inferential procedures. SPSS software will be used in the laboratory.

**SOCY 327. Urban Sociology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Origin, character and significance of urban communities. Ecological and social factors are analyzed as well as changes in urban social organization and their consequences.

**SOCY 330. Global Societies: Trends and Issues. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INTL/POLI 105 or POLI 201 or SOCY 101. An analysis of factors that are promoting the globalization of social, economic and political relations, and an inquiry into implications of these developments for individuals, localities, nations and the world community. The course will highlight the impact of culture and ethnicity, historical and emerging patterns of international business activity and their societal significance, divergent strategies for economic and social development in the world's regions, and the effects of population growth and environmental problems on public life within and among nations. Crosslisted as: INTL 330.

**SOCY 331. Juvenile Delinquency. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Analysis of the biological, cultural, psychological and social factors involved in juvenile delinquency and their relation to current techniques of treatment, prevention and control.

**SOCY 333. Gender in Society. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of instructor. Explores different theoretical approaches to gender and its intersections with other sources of inequality, including sexuality, race, class and age. Possible topics include masculinities, gender and the body, and how gender operates in various institutional settings, such as the economy and the family. Crosslisted as: GSW 333.

**SOCY 334. Sociology of Women. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or consent of instructor. This course will examine the position and status of women across societies and the social forces that maintain existing patterns and arrangements. The integration of family and work in women's lives will be emphasized. Crosslisted as: GSW 334.

**SOCY 336. Violence Against Women. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or GSWS 201. An examination of violence against women from a global and local perspective with a primary focus on violence perpetrated against women in the U.S. Requires a minimum of 20 hours of community service. Crosslisted as: GSWS 336.

**SOCY 340. Self and Society. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Focused discussion of the regularities in human behavior that arise due to man's participation in social groups. Emphasis will be placed on such topics as communications, attitudes, language, interpersonal perception, personal identities and social interaction.

**SOCY 341. Group Dynamics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Social and psychological principles and research related to the individual in groups. Specific topics include motivation for individuals forming and joining groups, performance and productivity of group members, group leadership and majority and minority influence. The group will be examined in relation to the larger society and as a subculture in itself. Crosslisted as: PSYC 341.

**SOCY 360. Sociology of Religion. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A systematic review and assessment of major sociological theories of and empirical research on religious behavior and groups. Topics include the structure of religious organizations; social correlates and functions of religion; denominationalism; religion and social class, social change and population. Crosslisted as: RELS 360.

**SOCY 370. Media and Society. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101, MASC 101 or POLI 103. A survey of the organization and social impact of the major types of mass media. Potential topics include the media as socializing agents; the effect of media messages on cultural patterns and social values; the impact of technology on social behavior; the role of "audiences" in interpreting media content; political and economic influences on the media industry; and the media as an instrument of social change. The structure and functions of the media in different societies will be compared.

**SOCY 391. Topics in Sociology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Maximum 6 credits per semester; maximum total of 18 credits in all departmental topics courses that may be applied to the major. Check with department for specific prerequisites. A discussion of specialized areas of sociological interest. See the Schedule of Classes for specific topics to be offered each semester.

**SOCY 401. Americans and the U.S. Health Care System. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: AFAM 103, AFAM/SOCY/WMNS/GSWS 305 or permission of the instructor. Explores issues surrounding the disparity in health status and health outcomes between African-Americans and other groups in the United States. Students are required to participate in an experiential exercise designed to enhance learning. Crosslisted as: AFAM 401.

**SOCY 402. Contemporary Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202 with a minimum grade of C; pre- or corequisite: SOCY 320. Restricted to sociology majors. A study of the works of the major sociological theorists of the 20th century.

**SOCY 403. Criminology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202 or permission of instructor. Analysis of the nature, extent and distribution of crime, emphasizing theories of and research on causation, prediction and prevention.

**SOCY 406. Sociology Senior Seminar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: 21 credit hours in sociology. Course must be taken in the student's last 30 hours at VCU. Senior capstone class; provides students the opportunity to synthesize, integrate and apply their sociological knowledge and skills.

**SOCY 410. Aging and the Life Course. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202 or permission of instructor. An introduction to the study of aging and the life course. Focus will be on research specific to older adulthood in order to foster an understanding of aging and old age as a characteristic of both individuals and societies. Requires a minimum of 20 hours of community service if taken as a service-learning course.

**SOCY 421. Advanced Research. 1-6 Hours.**

Methods Semester course; variable hours. Variable credit. May be repeated for a total of 6 credits. Prerequisites: POLI 320/SOCY 320 and SOCY 325. A laboratory course providing training in the application of social research methods under laboratory and field situations to problems of mutual interest to community policy makers and professionals in the disciplines of sociology, social psychology and anthropology. This course is designed to enhance the skills of students in applied social research. With direct supervision by the instructor, individuals or small groups of students will address themselves to the tasks of defining, designing and executing research projects.

**SOCY 426. Population Dynamics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202 or permission of instructor. The study of trends in fertility, mortality, population growth, distribution, migration and composition. The mutual influences of these factors and social organization.

**SOCY 430. Politics, Power and Ideology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202 or permission of instructor. Sociological analysis of political organization and behavior. Such subjects as distribution and uses of power, creation and management of group conflict, development and diffusion of political ideologies, and problems of bureaucracy and mass society will be considered.

**SOCY 434. Sociology of Sport. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Sport will be viewed as a major social institution within many societies. The class will study the relationship between sport and society both in terms of sport reflecting the ideology and culture of society as well as sport as an active agent of change in society. Race, gender and social class will be examined within the context of sport.

**SOCY 436. Sociology of Work and Labor Markets. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202 or permission of instructor. The study of industrial plants and business organizations as social systems.

**SOCY 440. Advanced Social Psychology. 3 Hours.**

Semester course; 3 credits. Prerequisites: SOCY 202 and SOCY 340 or permission of instructor. The study of how human groups create the environment that, in turn, influences their individual behavior. The symbolic interactionist perspective will be thoroughly explored for its contribution to the study of persons, objects and meaning.

**SOCY 445. Medical Sociology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202. A survey of the social, economic, cultural and social psychological factors in health and illness; the sociology of health and medical care organizations and settings; the sociology of health occupations; and the techniques of research in medical sociology.

**SOCY 446. Sociology of Mental Disorder. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A survey of selected social, economic, cultural and social psychological factors in mental health and illness. Such problems as defining mental illness; social factors in the distribution, diagnosis, etiology and treatment of mental disorders; mental illness as a social role; and research methods used in the sociology of mental illness will be considered.

**SOCY 476. Economic Sociology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 202. An examination of labor force participation in terms of the individual worker's experience, the work setting, the nature of occupations and labor force composition.

**SOCY 492. Independent Study. 1-6 Hours.**

Semester course; variable hours. Variable credit. Maximum of 6 credits per semester; maximum total of 12 credits for all independent study courses. Open generally only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of the instructor and department chair must be received prior to registration of the course. Cannot be used in place of existing courses.

**SOCY 493. Field Research Internship. 3 Hours.**

Semester course; 3 credits. May be repeated for a maximum of 6 credits. Prerequisites: applications must be approved by a faculty adviser and the internship coordinator. For sociology majors of junior or senior standing. Students are placed in organizations that offer supervised work or research experience appropriate to their interests. Each student must work 150 clock hours in the organization and write a sociological analysis of experiences using appropriate fieldwork methodological techniques.

**SOCY 498. Honors Research Course. 3 Hours.**

Semester course; 3 credits. Prerequisites: student must be in the honors program of the department and have achieved senior status. This course will entail the planning and execution of a major research project demonstrating a thorough understanding and use of research techniques in sociological/anthropological analysis, knowledge of relevant literature, sophisticated writing and research ability under the direction of a faculty mentor.

**Spanish (SPAN)****SPAN 101. Elementary Spanish. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of SPAN 101 to enroll in SPAN 102. Elementary grammar, reading and oral drills.

**SPAN 102. Elementary Spanish. 4 Hours.**

Continuous courses; 5 lecture/recitation hours. 4-4 credits. Prerequisite: completion of SPAN 101 to enroll in SPAN 102. Elementary grammar, reading and oral drills.

**SPAN 201. Intermediate Spanish. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 102. Continuation of the essentials of grammar, with emphasis on achieving proficiency in aural comprehension, speaking, reading and writing skills.

**SPAN 202. Intermediate Spanish Readings. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 201. Designed to increase the student's proficiency through the study of selected cultural and literary texts.

**SPAN 205. Intermediate Spanish Conversation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 201. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues and free conversation.

**SPAN 300. Advanced Grammar and Writing. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: SPAN 202 or 205. Prerequisite for SPAN 301: SPAN 300. A systematic review of Spanish grammar with emphasis on the elements of style and vocabulary building, translation and composition.

**SPAN 301. Advanced Grammar and Writing. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: SPAN 202 or 205. Prerequisite for SPAN 301: SPAN 300. A systematic review of Spanish grammar with emphasis on the elements of style and vocabulary building, translation and composition.

**SPAN 305. Spanish Conversation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 202, SPAN 205 or SPAN 300. Conducted in Spanish. Practice in the spoken language with emphasis on discussions relating to topics of current interest.

**SPAN 307. Spanish Conversation and Film. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: SPAN 202, SPAN 205 or SPAN 300. Designed to develop the student's conversational skills, oral comprehension ability and knowledge of contemporary culture through discussion of selected Spanish and Latin American films. Emphasis is also placed on vocabulary development and writing practice.

**SPAN 311. Spanish Through the Media. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 202, SPAN 205 or SPAN 300. Further development of listening, reading, writing, speaking and cultural skills through a focus on mass media in Latin America and Spain. Spanish language and current events will be taught through direct contact with newspapers, journals, television and radio programming, and online media. Students will view programs outside of class, participate actively in class discussions, create presentations and conduct research.

**SPAN 320. Civilization of Spain I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 300; SPAN 305 or 307 or 311; corequisite: SPAN 301. Conducted in Spanish. A treatment of salient manifestations of Spanish culture and civilization from its origins to the present.

**SPAN 321. Latin American Civilization I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 300; SPAN 305 or 307 or 311; corequisite: SPAN 301. Conducted in Spanish. A treatment of salient manifestations of Latin American culture and civilization from pre-Columbian times to the present.

**SPAN 322. Hispanic Immigrants in the U.S.. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 300; SPAN 305 or 307 or 311; corequisite: SPAN 301. Conducted in Spanish. Analysis, research and discussion of the life and history of Hispanics in the U.S. Topics such as identity, assimilation, immigration laws, education, jobs, housing, health, religion and politics will be covered. Students will apply their course learning through 15 hours of community service for Hispanics.



**SPAN 330. Survey of Spanish Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 300; SPAN 305 or 307 or 311; corequisite: SPAN 301. Conducted in Spanish. A survey of Spanish literature up to the present.

**SPAN 331. Survey of Latin American Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 300; SPAN 305 or 307 or 311; corequisite: SPAN 301. Conducted in Spanish. An introduction to major authors and trends up to the present. Crosslisted as: INTL 331.

**SPAN 332. Latino Writers in the U.S.. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 300; SPAN 305 or 307 or 311; corequisite: SPAN 301. Conducted in Spanish. Explores Latino cultural identity and the Latino contribution to U.S. cultural life through a variety of works in the different literary genres produced by Latino writers, both immigrants and those raised in the U.S.

**SPAN 400. Spanish Translation. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: SPAN 301; SPAN 305 or 307 or 311; SPAN 320 or 321 or 330 or 331. Conducted in Spanish. Integrates the basic theoretical and practical aspects of translation, focused from a perspective of applied linguistics. The course includes a workshop component and students will practice both written and oral translation of diverse texts. See the Schedule of Classes for the specific topic to be offered each semester.

**SPAN 401. Comparative Structures. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: SPAN 301; SPAN 305 or 307 or 311; SPAN 320 or 321 or 330 or 331. Conducted in Spanish. A comparison of English and Spanish, with emphasis on pronunciation and problems encountered in the teaching of Spanish. See the Schedule of Classes for the specific topic to be offered each semester. Crosslisted as: LING 401.

**SPAN 402. Language Issues in the Spanish-speaking World. 3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: SPAN 301; SPAN 305 or 307 or 311; SPAN 320 or 321 or 330 or 331. Conducted in Spanish. Through a variety of topics this course explores the links between language and human behavior as exemplified by language phenomena in the Spanish-speaking world. Topics will be drawn mainly from sociolinguistics, language and culture, and education and applied linguistics. See the Schedule of Classes for the specific topic to be offered each semester. Crosslisted as: LING 402.

**SPAN 403. History of the Spanish Language. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: SPAN 301; SPAN 305 or 307 or 311; SPAN 320 or 321 or 330 or 331. Conducted in Spanish. A study of the evolution of Spanish from Latin through the Middle Ages to the Modern era. Historical phonology, etymology, morphology, orthography, semantics and syntax of standard Castilian. See the Schedule of Classes for the specific topic to be offered each semester.

**SPAN 404. Spanish Interpretation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 301; SPAN 305 or 307 or 311; SPAN 320 or 321 or 330 or 331. This course covers theoretical and practical aspects of interpretation, including simultaneous and consecutive interpretation, as well as sight translation. The course also includes a workshop component in which students will put into practice these types of interpretation.

**SPAN 414. Commercial Spanish. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: SPAN 301; SPAN 305 or 307 or 311; SPAN 320 or 321 or 330 or 331. Conducted in Spanish. This course will develop the student's ability to use the Spanish language as a means of oral and written communication in the business world. See the Schedule of Classes for the specific topic to be offered each semester.

**SPAN 420. Civilization of Spain II. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: completion of 9 credits of Spanish at the 300 level including SPAN 300 or 301. This course explores the cultural diversity and differences of Spain. Topics focus on a particular interdisciplinary theme, such as the formation of cities, ethnicity and on a particular area of Spain. See the Schedule of Classes for the specific topic to be offered each semester.

**SPAN 421. Civilization of Latin America II. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: completion of 9 credits of Spanish at the 300 level including SPAN 300 or 301. This course explores the cultural diversity of Latin America and the social and political forces behind cultural change. Topics will focus on a specific interdisciplinary theme, such as urban life, the politics of identity and on a specific area of Latin America. See the Schedule of Classes for the specific topic to be offered each semester. Crosslisted as: INTL 421.

**SPAN 422. Spanish and Latin American Cinema. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different themes, up to a total of 6 credits. Prerequisites: completion of 9 credits of Spanish at the 300 level including SPAN 300 or 301. Conducted in Spanish. Spanish and/or Latin American cinema from the 1940s to the present, including the works of important directors, such as Bunuel, Saura, Almodovar, Emilio Fernandez, Glauber Rocha, Solanas or Gutierrez-Alea. The formal and aesthetic issues of cinematic texts and the historical, cultural and social contexts of their production. See the Schedule of Classes for the specific theme to be offered each semester.

**SPAN 430. Literary Genres. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: completion of 9 credits of Spanish at the 300 level including SPAN 300 or 301. Conducted in Spanish. An in-depth look at the development and expression of varieties of literature in Spanish. See the Schedule of Classes for the specific topic to be offered each semester.

**SPAN 431. Literary Periods. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different topics up to a total of 6 credits. Prerequisites: completion of 9 credits of Spanish at the 300 level including SPAN 300 or 301. Conducted in Spanish. An in-depth synchronic look at movements and their context in literature in Spanish. See the Schedule of Classes for the specific topic to be offered each semester.

**SPAN 432. Hispanic Culture Through Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 301; SPAN 320, SPAN 321 or SPAN 322; and SPAN 330, SPAN 331 or SPAN 332. Conducted in Spanish. An in-depth analysis of Hispanic texts dealing with cultural topics such as love relationships, death, family, religion, politics, gender and ethnicity, as well as their relationships to cultural values, behaviors, ideologies, beliefs and the histories of Spain and Spanish America.



**SPAN 433. Don Quixote. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 301, and SPAN 320 or SPAN 330. Conducted in Spanish. An in-depth analysis of Miguel de Cervantes's masterpiece. Focuses on questions of the literary, linguistic and cultural complexity of "Don Quixote." Examines the work in the social and historical context of Early Modern Spain.

**SPAN 485. Spanish Study Abroad. 1-12 Hours.**

Semester course; variable hours. Variable credit. Prerequisites: SPAN 301 and SPAN 321; SPAN 330 or 331 or 332. This course offers all students the opportunity to improve their oral and written proficiency in Spanish, to enhance their awareness of cultural diversity and to become independent learners of Spanish language and the cultures of its speakers.

**SPAN 491. Topics in Spanish. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated with different topics for a maximum of 9 credits. Prerequisites: SPAN 301; SPAN 305 or 307 or 311; SPAN 320 or 321 or 330 or 331. An in-depth study of selected topics in Spanish. See the Schedule of Classes for specific topics to be offered each semester.

**SPAN 492. Independent Study. 1-3 Hours.**

Semester course; variable hours. Variable credit. Maximum of 3 credits per semester; maximum total of 6 credits for all independent study courses in Spanish. Prerequisites: SPAN 301; SPAN 305 or 307 or 311; SPAN 320 or 321 or 330 or 331. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest.

**SPAN 494. Spanish Interpretation and Translation Internship. 1-3 Hours.**

Semester course; 50-150 clock hours in local, national or international internship placement where Spanish language interpretation or translation is required. 1-3 credits. Repeatable for up to 6 credits. Prerequisites: SPAN 301; SPAN 305 or 307 or 311; SPAN 320 or 321; SPAN 400; and SPAN 401. Under the supervision of both a faculty member and a field supervisor, students will apply their linguistic skills in an approved work situation. Each internship will be specifically designed in accordance with the student's linguistic level and the placement site requirements.

**Spanish/English Translation and Interpretation (SETI)****SETI 400. Spanish-English Comparative Grammar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: SPAN 301; SPAN 320, 321 or 322; and SPAN 330, 331 or 332. Conducted in Spanish and English. Advanced comparison of English and Spanish grammar with emphasis on the more complex forms of both languages.

**SETI 410. Introduction to Spanish-English Translation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SETI 400. Course conducted in Spanish and English. Integrates the basic theory and practical aspects of translation, focused from a perspective of applied linguistics. Practice given in both written and oral translation of diverse texts.

**SETI 411. Intermediate Translation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SETI 410. Course conducted in Spanish and English. Exposes students to more advanced translation skills, introducing a more focused vocabulary for the legal, medical, business and educational fields that regularly use translation. Introduces students to professional associations and journals of the industry, including those dedicated to literary translation. Analyzes pros and cons of computer-assisted translations.

**SETI 420. Introduction to Spanish-English Interpretation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SETI 400. Course conducted in Spanish and English. Covers theory and practical aspects of interpretation, including the three modes of interpretation – simultaneous, consecutive and sight translation.

**SETI 421. Intermediate Interpretation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SETI 420. Conducted in Spanish and English. Exposes students to more advanced interpreting skills in all three modes of interpretation – simultaneous, consecutive and sight translation – introducing a more focused vocabulary for the legal, medical, business and educational fields that regularly use interpreters.

**SETI 422. Legal Interpretation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SETI 420. Conducted in Spanish and English. Exposes students to the ethics, regulations and advanced vocabulary used in legal interpreting, with a focus on the state examination for certification in the court system.

**SETI 423. Medical Interpretation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SETI 420. Conducted in Spanish and English. Exposes students to the ethics, regulations and advanced vocabulary used in medical interpreting. Explores the range of accreditation bodies and history of national and international certification in the medical interpreter profession, with the goal of grooming students for careers in this field.

**SETI 493. SETI Internship. 3 Hours.**

Semester course; 120 clock hours in local, national or international internship placement where Spanish-English language interpretation or translation is required. 3 credits. Prerequisites: SETI 410 and SETI 420. Under the supervision of both a faculty member and a field supervisor, students will apply their translation and/or interpretation skills in an approved work situation. Each internship will be specifically designed in accordance with the student's linguistic level and the placement site requirements.

**Statistical Sciences and Operations Research (SSOR)****SSOR 490. Developing Professional Skills in Operations Research and Statistics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 or HONR 200; either OPER 427 and OPER 428, or STAT 321 and either STAT 305 or STAT 314. Capstone course designed to help students apply analysis techniques and attain proficiency in professional and academic communication in the context of statistics and operations research. Focuses on the discipline-specific skills necessary to excel in careers or graduate studies in these disciplines.

**SSOR 492. Independent Study. 2-4 Hours.**

Semester course; variable hours. 2-4 credits. Maximum 4 credits per semester; maximum total of 6 credits. Generally open only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration in the course. The student must submit a proposal for investigating some area or problem not contained in the regular curriculum. The results of the student's study will be presented in a report.

**SSOR 493. Internship. 3 Hours.**

Semester course; the equivalent of at least 15 work hours per week for a 15-week semester. 3 credits. Enrollment restricted to mathematical sciences/statistics and mathematical sciences/operations research majors only with junior or senior standing. Admission by permission from the department chair. Through placement in a position in business, industry, government or the university, the student will serve as an intern in order to obtain a broader knowledge of statistics or operations research techniques and their applications.

**Statistical Sciences (STAT)****STAT 206. Data Analysis and Statistics for Elementary Education. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Passing score on the PRAXIS I exam. Restricted to students majoring in liberal studies for early and elementary education. Understanding probability, describing data both graphically and numerically, regression/correlation, common distributions and interpretation, item analysis for tests, interpreting test scores and educational studies, experimental design and limitations, comparing results using t-tests. This course relies heavily on using a graphing calculator as a data-analysis tool. Students may receive credit toward graduation for only one of STAT 206, STAT 208, STAT 210, STAT 212 or SCMA 301.

**STAT 208. Statistical Thinking. 3 Hours.**

Semester course; 2 lecture and 1.5 laboratory hours. 3 credits. Prerequisite: satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course, or a minimum grade of C in MATH 131, MATH 141, MATH 151, MATH 200 or MATH 201. An exploration of the use of statistics in the world around us through in-depth case studies. Emphasis is on understanding statistical studies, charts, tables and graphs frequently seen in various media sources. Laboratories involve learning activities centered on case studies. Students may receive credit toward graduation for only one of STAT 206, STAT 208, STAT 210, STAT 212, STAT 312 or SCMA 301.

**STAT 210. Basic Practice of Statistics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course, or a minimum grade of C in MATH 131, MATH 141, MATH 151, MATH 200 or MATH 201. An exception to this policy is made in the case where the stated alternative prerequisite course has been completed at VCU. Designed for students who will likely take another quantitative reasoning course for which statistics may be a prerequisite. Not open to mathematical sciences or computer science majors. Topics include examining distributions, examining relationships, producing data, sampling distributions and probability, introduction to inference. Students may receive credit toward graduation for only one of STAT 206, STAT 208, STAT 210, STAT 212, STAT 312 or SCMA 301.

**STAT 212. Concepts of Statistics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course, or MATH 151, MATH 200 or MATH 201. Introductory statistics course with an emphasis on descriptive statistics, correlation and regression, probability, normal distributions, t distributions, and statistical inference. Graphing calculators will be used extensively. A core course for mathematical sciences. Students may receive credit toward graduation for only one of STAT 206, STAT 208, STAT 210, STAT 212, STAT 312 or SCMA 301.

**STAT 291. Topics in Statistics. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. A study of selected topics in statistics. Specific topics may fulfill general education requirements. See the Schedule of Classes for specific topics and prerequisites.

**STAT 305. Intermediate Statistics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 200 and STAT 212, or their equivalents. A study of intermediate-level statistical inference procedures, including categorical data analysis, analysis of variance, multiple regression and nonparametric procedures. Students may receive credit toward graduation for only one of STAT 305 or STAT 314.

**STAT 309. Introduction to Probability Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 307 and either MATH 211 or MATH 300. A study of the mathematical theory of probability, including finite and infinite sample spaces, random variables, discrete and continuous distributions, mathematical expectation, functions of random variables and sampling distributions.

**STAT 310. Introduction to Statistical Inference. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 212 and STAT/MATH 309, or permission of instructor. Framework for statistical inference. Point and interval estimation of population parameters. Hypothesis testing concepts, power functions, Neyman-Pearson lemma and likelihood ratio tests. Elementary decision theory concepts.

**STAT 314. Applications of Statistics. 4 Hours.**

Semester course; 4 lecture hours. 4 credits. Prerequisite: STAT 210 or 212. A study of the concepts and application of statistical methods including: estimation and hypothesis testing for two sample problems; one factor analysis of variance and multiple comparisons; randomized block designs and analysis; inferences on categorical data, including chi-square test for independence for contingency tables; simple linear regression and correlation; multiple linear regression. Special topics include distribution-free (nonparametric) methods in various statistical problems, two factor analysis of variance and the use of a statistical software package for data analysis. Students may receive credit toward graduation for only one of STAT 305 or STAT 314.

**STAT 321. Introduction to Statistical Computing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 212 and MATH 200 or their equivalents. The application of computers and computing software to statistical concepts using R, SAS and other quantitative software. Topics include data storage and retrieval, data modification and file handling, standard statistical analyses, graphical representations, practical presentation of results.

**STAT 391. Topics in Statistics. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisite: because of the changing subject matter to be treated in this course, permission of the instructor is required. A study of selected topics in statistics. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**STAT 403. Introduction to Stochastic Processes. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 307 and STAT/MATH 309. Introduction to the theory of stochastic processes and their applications. In-depth studies of random variables, conditional probability and conditional expectation. Topics include Markov chains, random walks, Poisson processes, birth and death processes and applications to classical problems (e.g., gambler's ruin, physics, etc.).

**STAT 415. Statistical Consulting. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 305 and STAT 321, or their equivalents. An introduction to the techniques of statistical consulting. Topics include applying statistical concepts to real-world scenarios, dealing with messy data and communicating results.

**STAT 421. Applied Statistical Computing Using R. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 310 and either STAT 305 or STAT 314, or their equivalents. Completion of STAT 321 is strongly recommended. Introduction to object-oriented programming in the R environment for use with statistical analyses. Topics include basic algorithms in R and applications involving random number generation, parametric and non-parametric data analysis and inference, linear models, simulation, and advanced data manipulation.

**STAT 422. Structured Problem Solving Using Statistics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: STAT 314, PSYC 214 or MGMT 302, or permission of instructor. Focuses on using analytic frameworks and applying statistics to solve problems in a real-world environment. Topics include discussion of analytical frameworks, problem restatement, divergent/convergent thinking, causal flow diagramming, the matrix method, decision tree analysis, review of sampling, confidence intervals, regression, ANOVA, chi squared tests, as well as applications of these concepts to solve case studies.

**STAT 423. Nonparametric Statistics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 305 and STAT 321. Introduction to statistical estimation and inference methods that require relatively mild assumptions about the underlying population distribution. Topics include classical nonparametric hypothesis testing methods, permutation tests, bootstrap methods and density estimation.

**STAT 425. Multivariate Statistics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 307, MATH 310, STAT/MATH 309, and either STAT 305 or STAT 314. Completion of STAT 421 is strongly recommended. Introduction to multivariate statistical analysis methods. Topics include multivariate probability distributions and their properties, conditional and marginal distributions, multivariate normal distribution, Hotelling's T<sup>2</sup> distribution, multivariate analysis of variance, repeated measures, multivariate regression, principle component analysis, exploratory factor analysis, linear discriminant analysis, cluster analysis, and regression trees. Students will use modern statistical software to perform these analyses.

**STAT 435. Industrial Statistics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 309/MATH 309 and either STAT 305 or STAT 314. Introduction to statistical methods for quality control and process improvement. Topics include special versus common causes of variation, statistical thinking in industrial settings, Shewhart control charts, capability analysis, components of variation, design of experiments and response surface methods. Incorporates use of statistical software.

**STAT 441. Applied Statistics for Engineers and Scientists. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 201 or equivalent, and a working knowledge of computers. An introduction to applied statistics intended primarily for students in engineering. The fundamental ideas about the collection and display of information, descriptive statistics and exploratory data analysis, elementary probability theory, frequency distributions, and sampling are covered. Other topics include tests of hypotheses and confidence intervals for one and two sample problems; ANOVA; principles of one-factor experimental designs including randomized complete block designs, fixed and random effects and multiple comparisons; correlation and linear regression analysis; control charts; contingency tables and goodness-of-fit. Students may receive degree credit for only one of STAT 441, STAT 543/BIOS 543 or STAT 641.

**STAT 443. Regression. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 305 and STAT 321, or permission of instructor. Completion of MATH 310 is strongly recommended. Introduction to the concepts and methods of linear regression, logistic regression, and other nonlinear regression models. Topics include model development and assumptions, estimation of model parameters, statistical inferences about the regression model, selection of an appropriate model, and diagnostics regarding multicollinearity and influence points. Applications involve the use of a statistical software package.

**STAT 475. Time Series. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 321 and either STAT 305 or STAT 314. Completion of STAT 421 is strongly recommended. Introduction to the modeling of univariate time series data. Topics include simple and exponential moving averages, Brown's double exponential smoothing, Holt-Winters model, autocorrelation, partial autocorrelation, autoregressive integrated moving average models, seasonal autoregressive moving average models, harmonic analysis and time series regression. Students will use modern statistical software to perform these analyses.

**University Studies (UNVS)****UNVS 291. Interdisciplinary Topics. 1-4 Hours.**

Semester course; variable hours. 1-4 credits per semester. Maximum total of 8 credits in all university studies courses. An interdisciplinary course designed to give the student an overview of a topic not associated with a particular discipline.

**World Studies (WRLD)****WRLD 203. Cultural Texts and Contexts: \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Through the analysis and interpretation of literary, cinematic and other cultural texts, this course explores the ways cultural and national identities have been shaped, imagined and contested in various regions of the world. While responding to the readings and films as artistic manifestations or social documents, students will also become familiar with the aesthetic, political and social contexts in which the works were and are produced. See the Schedule of Classes for specific topics to be offered each semester. Crosslisted as: INTL 203.

**WRLD 210. International Social Justice Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An overview of the issues, themes, disciplines, and areas of research and teaching that comprise international social justice studies in a variety of global contexts.

**WRLD 220. Human Rights and Literature. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A cross-cultural survey of human rights violations. The moral, political and pragmatic dimensions in the international response to violations are investigated including transnational organizations that document abuses as expressed in memoirs, eyewitness accounts, literature and film.

**WRLD 230. Introduction to World Cinema. 3 Hours.**

Semester course; 5 lecture/screening hours. 3 credits. An overview of the main theoretical frameworks, critical concepts and debates devoted to non-Hollywood world cinemas, with special emphasis on the rethinking of national cinema and the problematizing of identity in an increasingly transnational era. Broad interdisciplinary readings in film theory, film history and cultural studies will be supplemented by case studies of particular cinemas and filmmakers, so as to convey an appreciation of the main international movements in the history of cinema.

**WRLD 291. Topics in World Languages and Cultures. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated with different content for a maximum of 6 credits. A study of a specialized topic in world cultures and languages. See the Schedule of Classes for specific topics to be offered each semester.

**WRLD 302. Communicating Across Cultures. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Designed to increase understanding of the foundational concepts of communication and intercultural dialogue. Examines (among others) such concepts as individualism, collectivism, ethnocentrism, xenophobia, uncertainty avoidance, nonverbal communication and stereotyping.

**WRLD 310. Mediterranean Cultural Geography. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An in-depth analysis of the Mediterranean region, its distinctive and defining features (physical, climatic and sociopolitical) and its paradigmatic role in global politics and economy.

**WRLD 311. Civilization of the Mediterranean. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Exploration of the Mediterranean from pre-history to modernity, with an emphasis on cross-cultural engagement. Aims at exploring the interaction and cross-cultural fertilization between societies and cultures of the lands of the Middle Sea: North Africa, Middle East and southern Europe.

**WRLD 330. Introduction to Film Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: WRLD 230 or permission of instructor. An overview of film studies with special attention given to the debates informing the periodization of film history, the critical paradigms of the major film theories and the elements of a cinematographic language from both a technical and aesthetic standpoint.

**WRLD 359. International Media Coverage: The Middle East. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 101 with a minimum grade of C or 151 with a minimum grade of C. This interdisciplinary course explores the media's role in covering cultural, political, religious and other issues in the Middle East. Students will examine the role and impact of the media in both the United States and Middle East in shaping global and regional public opinion. Using webcam and online technology, VCU students will discuss cross-cultural perspectives with students from the other U.S. universities and universities in the Middle East.

**WRLD 391. Topics in World Languages and Cultures. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated with different content for a maximum of 6 credits. An in-depth study of a specialized topic in world cultures and languages. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**WRLD 422. National Cinema. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Course can be repeated with different themes up to a total of 6 credits. Prerequisite: WRLD 230 or 330 or permission of instructor. Tracing the development of cinematic traditions in selected nations, this course focuses on the thematic selections and stylistic techniques particular to that particular cinematographic culture. See the Schedule of Classes for the specific theme to be offered each semester.

**WRLD 430. Film and the City. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Focuses on cinematic representations of cities worldwide, so as to probe the increasingly cross-cultural dynamics of urban landscapes. Films discussed will span the entire history of cinema across genres and national traditions.

**WRLD 490. Seminar in World Cultures and Languages. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Restricted to seniors in world cultures and languages with at least 85 credit hours earned toward the degree. Research and analysis of a selected topic in world cultures and languages in a seminar setting.

**WRLD 491. Topics in World Languages and Cultures. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated with different content for a maximum of 6 credits. An intensive and comprehensive examination of specialized areas of interest in world cultures and languages. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**WRLD 493. World Cultures Internship. 1-3 Hours.**

Semester course; variable hours. 1-3 credits (40 clock hours per credit). May be repeated for a maximum of 6 credits, however only 3 credits can count toward the major concentration. Prerequisites: completion of 9 credits of upper-level (300- or above) course work toward any non-foreign-language concentration within the School of World Studies, and permission of the internship coordinator. Student must be in good academic standing with a minimum major GPA of 2.25. Designed for the advanced student to gain workplace experience in internationally oriented public and private organizations and agencies.

**WRLD 499. Senior Capstone Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: completion of 6 credits of 400-level courses in the major and senior standing. Open only to students enrolled as majors in the School of World Studies, including anthropology, religious studies, and world cultures and languages. Capstone seminar summarizing and synthesizing studies in World Studies programs. Preparation for entry into career search. Organization and polishing of written works representing skills acquired in programs. Assembly of individual portfolio as means of assessment and career tool.

## School of Allied Health Professions

### Allied Health Professions (ALHP)

**ALHP 391. Special Topics. 1-4 Hours.**

Semester course; 1-4 credits. Prerequisite: permission of instructor. Offered for undergraduate level. Interdisciplinary study through lectures, tutorial study or independent research of selected topics not provided in other courses.



## Clinical Laboratory Sciences (CLLS)

### **CLLS 201. Introduction to Clinical Laboratory Science. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Open to students on the Monroe Park Campus who are interested in clinical laboratory science/medical technology as a career. Presentation and discussion of clinical laboratory science including an introduction to each of the specific areas of concentration, job opportunities in the profession and a tour of a hospital laboratory. Graded as pass/fail.

### **CLLS 300. Basic Concepts. 1.5 Hour.**

Semester course; 1 lecture and 1 laboratory hours. 1.5 credits. An introduction to the basic concepts/techniques applicable to all laboratory science areas. Includes optical physics, quality control, laboratory safety, medical terminology and pipetting techniques along with other basic subjects.

### **CLLS 301. Hematology. 2-7.5 Hours.**

Continuous courses; 4.5 lecture and 6 laboratory hours. 2-7.5 credits. Prerequisite: completion of CLLS 301 to enroll in CLLS 302. A study of the blood and blood-forming tissues. Emphasis is placed on hematologic techniques, accurate identification of normal and abnormal cells and their correlation with normal or pathologic conditions. An introduction to the hemostatic mechanism also is presented.

### **CLLS 302. Hematology. 1-4 Hours.**

Continuous courses; 4.5 lecture and 6 laboratory hours. 2-7.5 credits. Prerequisite: completion of CLLS 301 to enroll in CLLS 302. A study of the blood and blood-forming tissues. Emphasis is placed on hematologic techniques, accurate identification of normal and abnormal cells and their correlation with normal or pathologic conditions. An introduction to the hemostatic mechanism also is presented.

### **CLLS 304. Urine and Body Fluid Analysis. 1-2 Hours.**

Semester course; 1.5 lecture and 1 laboratory hours. 1-2 credits. A study of the principles and practices of urinalysis, kidney function, cerebrospinal fluid and other body fluids.

### **CLLS 306. Immunohematology. 2.5-4.5 Hours.**

Semester course; 2.5 lecture and 4 laboratory hours. 2.5-4.5 credits. Prerequisite: CLLS 310. A study of the theory and principles of blood banking with an emphasis on methods and techniques used in the laboratory for cell typing, cross-matching and antibody identification.

### **CLLS 307. Introduction to Pathogenic Microbiology. 1-3 Hours.**

Semester course; 3 lecture hours. 1-3 credits. May be taken as 1 credit each for study of basic parasitology, mycology or virology. Includes fundamentals of parasites, fungi and viruses as potentially pathogenic microorganisms.

### **CLLS 308. Pathogenic Bacteriology. 3-5 Hours.**

Semester course; 3 lecture hours and 4 laboratory hours. 3-5 credits. Emphasis is placed on pathogenic bacteria, techniques, pathogenesis, epidemiology, isolation and identification, and antimicrobial susceptibility testing.

### **CLLS 310. Clinical Immunology. 3-4.5 Hours.**

Semester course; 3.5 lecture and 2 laboratory hours. 3-4.5 credits. Introduces the basic principles of immunology, serology and molecular diagnostics. Emphasis is placed on laboratory evaluation of the immune response including both cellular and humoral aspects. Serologic techniques are practiced in the laboratory sessions.

### **CLLS 311. Clinical Chemistry and Instrumentation I. 3-5 Hours.**

Semester course; 3 lecture and 4 laboratory hours. 3-5 credits. A study of human physiology and metabolism in health and various disease states. Topics include energy and nitrogen metabolism and proteins in body fluids. Emphasis is placed on the application of quantitative analytical methods and instrumentation for the chemical characterization of body fluids to provide clinically useful information for the diagnosis and treatment of diseases.

### **CLLS 312. Clinical Chemistry and Instrumentation II. 4-5 Hours.**

Semester course; 4 lecture and 2 laboratory hours. 4-5 credits. Prerequisite: CLLS 311 or permission of the instructor. A study of human physiology and metabolism in health and various disease states. Topics include water and ion balance, clinical enzymology, therapeutic drug monitoring, and toxicology. Emphasis is placed on the application of quantitative analytical methods and instrumentation for the chemical characterization of body fluids to provide clinically useful information for the diagnosis and treatment of diseases.

### **CLLS 337. Clinical Education. 1 Hour.**

Semester course; 120 clock hours. 1 credit. Supervised clinical experience in hospitals across the state is designed to give the student a broader clinical education and to provide venipuncture experience. In addition to the application of academically acquired knowledge, this affiliation provides an opportunity for the student to correlate each area of study into one composite picture for final laboratory diagnosis. Closer working relationships with other allied health personnel is an important aspect of this affiliation. Graded as pass/fail.

### **CLLS 407. Interpretive Immunohematology. 2-2.5 Hours.**

Semester course; 2.5 lecture hours. 2-2.5 credits. Prerequisites: CLLS 306 and 310, or permission of instructor. Advanced study of the principles of immunohematology and immunology with major emphasis on blood group systems and blood components. Includes the application of laboratory data and techniques to solve problems in blood banking and immunology.

### **CLLS 408. Advanced Microbiology. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLLS 307 and 308, or permission of instructor. Advanced study of the principles of pathogenic microbiology. Includes the application of laboratory data and techniques to solve problems in the clinical microbiology laboratory.

### **CLLS 409. Interpretive Hematology. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLLS 301-302 and 485, or permission of instructor. Advanced study of the principles of hematopoiesis and their pathophysiological correlation to hematological disorders. Interpretation of morphological findings are correlated with case histories. Includes homeostatic problems.

### **CLLS 410. Advanced Clinical Chemistry and Instrumentation. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLLS 311-312, or permission of instructor. Presents an advanced study of (1) the principles of clinical chemistry as related to intermediary metabolism and pathology and (2) laboratory and hospital information systems. Includes the application of laboratory data and technologies to solve problems in analytical methods and instruments.

### **CLLS 411. Principles of Education/Management. 2.5-3.5 Hours.**

Semester course; 3 lecture hours. 2.5-3.5 credits. Introduces fundamental educational theories and practice, principles of management and employee relations and health-care issues from a global perspective with an emphasis on multicultural diversity. Stresses the application of these theories in the clinical laboratory.



**CLLS 412. Senior Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Seminars are presented on various aspects of professionalism, experimental design and critical evaluation of scientific literature. A simulated registry exam is given at the conclusion. Graded as pass/fail.

**CLLS 415. Special Topics in Clinical Laboratory Sciences. 1-6 Hours.**

Semester course; 1-6 credits. Course provides for tutorial studies, laboratory experience and/or library assignments in specialized areas for those students who have previous course work or laboratory experience in a specific subject.

**CLLS 438. Research Paper. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. This course is designed to introduce the student to the fundamentals of scientific writing. Crosslisted as: HONR 492.

**CLLS 483. Biochemistry Practicum. 1-4.5 Hours.**

Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLLS 311-312. Individual participation in hospital chemistry laboratories. Students gain practical experience in the use of procedures and instruments by working with the staff. After gaining competence, students are expected to perform and sign out routine laboratory work under supervision. Graded as pass/fail.

**CLLS 485. Hematology Practicum. 1-4.5 Hours.**

Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLLS 301-302. Individual participation in hospital hematology laboratories. Students gain practical experience in the use of procedures and instruments by working with the staff. After gaining competence, the students are expected to perform and sign out routine laboratory work under supervision. Graded as pass/fail.

**CLLS 493. Clinical Microbiology Practicum. 1-4.5 Hours.**

Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLLS 307-308. Individual participation in hospital bacteriology laboratories. Students gain practical experience in the performance and use of procedures by working with the clinical staff. After gaining competence, the students are expected to properly perform and sign out routine laboratory work under supervision. Graded as pass/fail.

**CLLS 494. Miscellaneous Clinical Practicum. 1-4.5 Hours.**

Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLLS 301-302, 308, 310, 311-312 or permission of instructor. Students gain practical experience in the use of instruments and the performance of procedures by working with the clinical staff. After gaining competence, students are expected to properly perform and sign out routine laboratory work under supervision. Graded as pass/fail.

**CLLS 496. Blood Bank Practicum. 1-4.5 Hours.**

Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisite: CLLS 306. Individual participation in hospital blood bank laboratories and Virginia Blood Services. Students gain practical experience in the use of procedures and instruments by working with the staff. Donor drawing and component preparation is observed. After gaining competence, the students are expected to properly perform and sign out routine laboratory work under supervision. Graded as pass/fail.

**Clinical Radiation Sciences (CLRS)****CLRS 101. Introduction to Clinical Radiation Sciences. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Open to students on the Academic Campus who are interested in clinical radiation sciences as a career. Presentation and discussion of the art and science of medical imaging. The use of ionizing radiation will be explored from its discovery to its current application in therapy and medical diagnosis. Radiography, nuclear medicine and radiation therapy will be discussed in terms of career specialties within the profession.

**CLRS 201. Radiographic Imaging and Exposure I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 205. Corequisite: CLRZ 201. Introduction to radiographic equipment and the imaging process. Covers topics including equipment operation and manipulating radiation exposure to produce quality radiographs. Presents information that prepares students for clinical practice. Emphasizes clinical problem-solving as it relates to patient variables, pathology and technical exposure factors.

**CLRS 203. Pathophysiology I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Presentation of the principles of disease and an introduction to various conditions of illness involving body systems.

**CLRS 204. Pathophysiology I and II. 3 Hours.**

Continuous courses; 3-3 lecture hours. 3-3 credits. Prerequisites: BIOL 205, PHIS 206 and PHIZ 206. Completion of CLRS 203 to enroll in CLRS 204. Presentation of the principles of disease and an introduction to various conditions of illness involving body systems.

**CLRS 205. Exploring Radiation Sciences. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. A general overview of the wide variety of imaging and treatment modalities in radiation sciences will be presented. Emphasis will be on understanding how these modalities are utilized in today's complex health care environment, as well as the role of the technologist/therapist.

**CLRS 206. Cross-sectional Anatomy. 2 Hours.**

Semester course; 4 laboratory hours. 2 credits. Prerequisite: permission of instructor. A general overview of cross-sectional anatomy at representative levels will be presented. Emphasis will be on identifying major muscles, organs, bones and vessels on diagrams, photographs and images.

**CLRS 208. Foundations of Patient Care. 4 Hours.**

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Legal, ethical and technical foundations of patient care will be explored with emphasis on the application of these principles to common radiologic situations.

**CLRS 211. Radiographic Procedures I. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: CLRS 208 with a minimum grade of C. Combines the study of anatomy and physiology and positioning for diagnostic radiographic examinations of the upper extremity, thorax, abdomen, lower extremity, spine and pelvis. Requires demonstration of competence in radiographic procedures, including positioning of simulated patients, manipulation of radiographic equipment and evaluation of radiographs.

**CLRS 212. Radiographic Procedures II. 2 Hours.**

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisite: CLRS 211 with a minimum grade of C. Continuation of CLRS 211 with emphasis on anatomy and physiology and positioning for diagnostic radiographic examinations of routine contrast studies and basic headwork. Requires students to demonstrate competence in radiographic procedures, including positioning of simulated patients, manipulation of radiographic equipment and evaluation of radiographs.

**CLRS 232. Radiation Safety. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Provides an overview of radiation protection as it applies to the radiation sciences. Emphasizes radiation sources, detection and regulations. Discusses radiation protection responsibilities of the radiologic technologist for patients, personnel and the public.

**CLRS 294. Introduction to Clinical Education I. 0.5 Hours.**

Semester course; 60 clinical hours. 0.5 credit. Prerequisite: CLRS 208 with a minimum grade of C. Introduction to clinical experience supervised by clinical faculty and affiliate facility staff. Introduces students to the clinical process and equipment, and provides practical experience in routine, basic procedures.

**CLRS 295. Introduction to Clinical Education II. 1 Hour.**

Semester course; 120 clinical hours. 1 credit. Prerequisites: CLRS 201, 211, 232 and 294 with a minimum grade of C in all. Continued introduction to clinical experience supervised by clinical faculty and affiliate facility staff. Provides additional practical experience in routine, basic procedures.

**CLRS 303. Orientation to Nuclear Medicine. 2 Hours.**

Semester course; 1 lecture and 2 clinical hours. 2 credits. Prerequisites: CLRS 208 and CLRS 232 both with a minimum grade of C. Designed to acquaint the student with the field of nuclear medicine in general and the Program in Nuclear Medicine Technology in particular. It also provides an introduction to clinical practice.

**CLRS 305. Orientation to Radiation Therapy. 2 Hours.**

Semester course; 1 lecture and 2 laboratory hours. 2 credits. Prerequisites: CLRS 208 and CLRS 232, both with a minimum grade of C. Introduction to the clinical process, equipment and history of radiation therapy. Information will be presented that prepares the student to begin clinical practice. Clinical rotations and lab exercises are designed to expose the student to various aspects of radiation therapy.

**CLRS 309. Oncologic Patient Care. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 208 with a minimum grade of C. Pre- or corequisite: CLRS 305. Covers the basic concepts of patient care specific to radiation therapy, including consideration of physical and psychological conditions. Patient interactions, patient examinations, asepsis, local and systemic reactions, nutrition and medications are discussed. Factors influencing patient health during and following a course of radiation will be identified.

**CLRS 312. Radiographic Procedures III. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 212 with a minimum grade of C. Continuation of CLRS 211 and 212 to cover additional and alternative positions for routine radiographic examinations as well as special studies of circulatory, reproductive, urinary, skeletal and central nervous systems. Discusses equipment, procedures and strategies for performing pediatric, trauma, mobile and operating room radiographic exams. Includes small group simulation opportunities.

**CLRS 314. Pathology and Treatment Principles I. 4 Hours.**

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisites: CLRS 309 and CLRS 323 with a minimum grade of C in both. Presents the fundamentals of the disease processes for cancer of the following: skin, thorax, genitourinary, gynecological, head and neck, central nervous system, and breast. Discusses malignant condition, etiology and epidemiology, patient workup, and methods of treatment. Attention to patient prognosis, treatment results and the effects of combined therapies. Requires demonstration of competence in selected radiotherapeutic procedures, including positioning of simulated patients and the manipulation of equipment.

**CLRS 317. Nuclear Medicine Procedures I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: two semesters of general chemistry. Pre- or corequisite: CLRS 303. Presents the techniques employed in the performance of routine nuclear medicine procedures. Topics include anatomy and physiology, pathology, patient preparation, contraindications, radiopharmaceuticals, dose route of administration, biodistribution, imaging protocols, equipment setup, and common findings.

**CLRS 318. Nuclear Medicine Procedures II. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 317 with a minimum grade of C. Presents the techniques employed in the performance of routine nuclear medicine procedures. Topics include anatomy and physiology, pathology, patient preparation, contraindications, radiopharmaceuticals, dose route of administration, biodistribution, imaging protocols, equipment setup, and common findings.

**CLRS 319. Nuclear Medicine Procedures III. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 318 with a minimum grade of C. Presents the techniques employed in the performance of routine nuclear medicine procedures. Topics include anatomy and physiology, pathology, patient preparation, contraindications, radiopharmaceuticals, dose route of administration, biodistribution, imaging protocols, equipment setup, and common findings.

**CLRS 320. Radiographic Imaging and Exposure II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLRS 201 and CLRS 201 both with a minimum grade of C. Emphasizes federal regulations and monitoring of the imaging system components that may affect radiographic quality through improper functioning. Provides in-depth exploration of digital imaging.

**CLRS 321. Nuclear Medicine Physics and Instrumentation I. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Pre- or corequisite: CLRS 303. Corequisite: CLRS 321. Presents the physical principles of atomic structure, electromagnetic spectrum, units of measurement, radioactive decay and attenuation in matter. Operation of radiation equipment will include statistical applications and quality control procedures.

**CLRS 322. Nuclear Medicine Physics and Instrumentation II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLRS 317, CLRS 321 and CLRS 321 with a minimum grade of C in all. Corequisite: CLRS 322. Presents advanced applications in physics and the operating principles of nuclear medicine imaging devices and related quality control procedures.

**CLRS 323. Radiation Therapy, Techniques and Applications. 4 Hours.**

Semester course; 4 lecture hours. 4 credits. Pre- or corequisite: CLRS 305. Presents the basic concepts of dosimetry and treatment planning. Various external beam techniques and applications, depth dose data and summation of isodose curves are discussed. Modalities of treatment, patient setup, dose measurement and verification also are included.

**CLRS 331. Radiographic Imaging Equipment. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 320 with a minimum grade of C. Presents the principles and operation of general and specialized X-ray equipment. Emphasizes the equipment necessary to perform radiographic, fluoroscopic and tomographic examinations.

**CLRS 332. Radiographic Pathology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLRS 204 and CLRS 393 with a minimum grade of C or permission of instructor. Provides introduction to the study of radiographic pathology through reading and observation of film interpretation. Emphasizes recognition of common disease processes as demonstrated radiographically and, via advanced imaging modalities; where appropriate, understanding how to vary positioning and techniques to produce optimally diagnostic images; and the role of different imaging modalities in the evaluation of disease.

**CLRS 341. Radiation Physics. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: PHYS 101, PHYZ 101 or PHYS 201 and CLRS 232 with a minimum grade of C. Discusses fundamentals of the atom, electricity and magnetism. Emphasizes the production of X- and gamma rays, and the interaction of radiation with matter.

**CLRS 342. Physics for Radiation Therapy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLRS 323 and CLRS 341 with a minimum grade of C in both. Includes a discussion of the properties of electromagnetic and particulate radiation. Details of production, interactions, treatment units, measurement of radiation, radioactivity and brachytherapy are presented.

**CLRS 390. Research Methods in the Radiation Sciences. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Pre- or corequisites: STAT 210 and junior standing or permission of instructor. The fundamentals of the research process will be presented for analysis and discussion. Elements of research appropriate to the radiation sciences will be reviewed. Emphasis will be on the ability to critically review research studies along with the selection and design of a research project.

**CLRS 393. Clinical Education I. 2-5 Hours.**

Semester course; variable clinical hours (120 hours per credit). 2-5 credits. Prerequisites: CLRS 208 and CLRS 232 with a minimum grade of C in both and CLRS 201 with a minimum grade of C or CLRS 303 or CLRS 305. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain practical experience in routine, basic procedures and observe more advanced procedures.

**CLRS 394. Clinical Education II. 2-4 Hours.**

Semester course; variable clinical hours (120 hours per credit). 2-4 credits. Prerequisite: CLRS 393 with a minimum grade of C. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain practical experience in routine, basic procedures and observe more advanced procedures.

**CLRS 395. Clinical Education III. 2-6 Hours.**

Semester course; variable clinical hours (120 hours per credit). 2-6 credits. Prerequisite: CLRS 394 with a minimum grade of C. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain additional practical experience in routine as well as advanced procedures.

**CLRS 398. Introduction to Research. 1 Hour.**

Semester course; 1 credit. Prerequisite: CLRS 390. Provides students the opportunity to explore and investigate a topic of special interest in their area of concentration under the supervision of a faculty adviser. Emphasizes the application of research concepts to writing a research project proposal.

**CLRS 403. Advanced Patient Care for the Imaging Professional. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLRS 208 with a minimum grade of C and junior standing or permission of instructor. Explores advanced patient care techniques and age-specific considerations in the radiation sciences. Emphasizes the application of advanced patient care principles.

**CLRS 405. Principles of Mammography. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLRS 201 and CLRS 320 with a minimum grade of C in both and senior standing or permission of instructor. Presentations and discussions designed to provide an overview of the principles of mammography. Topics include history, anatomy, physiology and pathology of the breast; exposure techniques; and quality control. Focuses on routine and specialized positioning of the breast and image evaluation to prepare students for practical experience in mammography.

**CLRS 406. Introduction to MRI. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 341 with a minimum grade of C or permission of instructor. An introduction to the elements of magnetic resonance imaging, including instrumentation, physical principles, image production and quality, MR safety, magnetic resonance angiography and imaging applications.

**CLRS 407. Introduction to PET/CT. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 408. Overview of PET and PET/CT focusing on instrumentation, radiopharmaceuticals and its diagnostic application in neurology, oncology and cardiology.

**CLRS 408. Introduction to Computed Tomography (CT). 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 341 with a minimum grade of C or permission of instructor. Provides the student with an overview of computed tomography. Topics include computed tomography physical principles, data acquisition/image reconstruction, equipment and terminology. Patient care issues (i.e., preparation, monitoring) and basic quality control will be introduced.

**CLRS 410. Routine Computed Tomography Procedures. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisites: CLRS 206 and 408, or permission of instructor. Presents routine procedures used in computed tomography imaging. Reviews examinations and protocols involving the head, chest, abdomen and extremities.

**CLRS 412. Radiation Therapy Treatment Planning. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: CLRS 323 and CLRS 342 with a minimum grade of C in both or permission of instructor. An introduction to routine 2-D and 3-D treatment planning for the most common forms of cancer including prostate, rectum, lung, breast, and head and neck regions. Simulated lab training using a treatment planning system will be included. Emphasis will be on the rationale and process of treatment planning for patients undergoing radiation therapy.

**CLRS 415. Pathology and Treatment Principles II. 4 Hours.**

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite:

CLRS 314 with a minimum grade of C. A continuation of CLRS 314.

Presents the fundamentals of the disease process for the following cancers: gastrointestinal, lymphomas and hematological malignancies, bone tumors, childhood tumors, and eye and orbital tumors. Discusses patient workup and prognosis, treatment results, and the effects of combined therapies. Radiotherapeutic emergencies, palliation and combined modality treatment also will be discussed. Emphasis will be placed on traditional and advanced technology and its applications in treatment delivery in radiation oncology. Requires demonstration of competence in selected radiotherapeutic procedures, including positioning of simulated patients and the manipulation of equipment.

**CLRS 417. Nuclear Medicine Procedures IV. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 319

with a minimum grade of C. Presents the techniques employed in the performance of advanced nuclear medicine procedures. Topics include anatomy and physiology, pathology, patient preparation, contraindications, radiopharmaceuticals, dose route of administration, biodistribution, imaging protocols, equipment setup, and common findings.

**CLRS 420. Introduction to Vascular-Interventional Radiology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: departmental approval. Introduction to the basic techniques of vascular and interventional radiologic procedures with emphasis on the anatomy demonstrated, equipment, contrast agents, and the role and responsibilities of the technologist.

**CLRS 430. Radiobiology. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLRS 232 with a minimum grade of C and senior standing or permission of instructor. Presents the principles of biologic responses to radiation, including factors influencing radiation effects, tissue sensitivity and tolerance. Clinical application in radiography, nuclear medicine and radiation therapy are reviewed.

**CLRS 453. Quality Management in Nuclear Medicine. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLRS 322 and CLRS 322 with a minimum grade of C in both. Explores the quality assurance parameters in a nuclear medicine department. Emphasis is given to the performance of tests to assess survey meters, spectrometers, dose calibrators, gamma cameras and SPECT imaging systems. Additionally, quality assurance is discussed in terms of radiopharmaceuticals, radioimmunoassay laboratories and patient management.

**CLRS 455. Quality Management in Radiation Therapy. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLRS 323 and CLRS 342 with a minimum grade of C. Designed to provide the student with knowledge of the concepts and principles of quality assurance. The performance of various tests including purpose, sources of malfunction and action guidelines will be discussed.

**CLRS 461. Radiopharmaceutical: Preparation and Quality Control. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLRS 319, CLRS 322 and CLRS 322, all with a minimum grade of C. Provides the technical knowledge necessary for the preparation and quality control of radiopharmaceutical agents for in-vivo and in-vitro nuclear medicine studies.

**CLRS 471. Radiology Imaging Procedures for Radiologist Assistants I and II. 3 Hours.**

Continuous courses; 3-3 lecture hours. 3-3 credits. Prerequisites: CLRS 332, CLRS 403, CLRS 403 and permission of instructor. Completion of CLRS 471 to enroll in CLRS 472. Establishes a framework for radiologist assistants' participation in patient examinations for diagnostic inspection and/or therapeutic treatment. Emphasizes establishment of fundamental radiology procedures that follow American College of Radiology Standards for principles and practices producing high-quality radiographic care. Includes basic radiology procedures in genitourinary, gastrointestinal, pediatric, thoracic, musculoskeletal selections and vascular/interventional specialties. Addresses legal, ethical and professional issues concerning radiologist assistants.

**CLRS 472. Radiology Imaging Procedures for Radiologist Assistants I and II. 3 Hours.**

Continuous courses; 3-3 lecture hours. 3-3 credits. Prerequisites: CLRS 332, CLRS 403, CLRS 403 and permission of instructor. Completion of CLRS 471 to enroll in CLRS 472. Establishes a framework for radiologist assistants' participation in patient examinations for diagnostic inspection and/or therapeutic treatment. Emphasizes establishment of fundamental radiology procedures that follow American College of Radiology Standards for principles and practices producing high-quality radiographic care. Includes basic radiology procedures in genitourinary, gastrointestinal, pediatric, thoracic, musculoskeletal selections and vascular/interventional specialties. Addresses legal, ethical and professional issues concerning radiologist assistants.

**CLRS 475. Medical Imaging Fundamentals for Radiologist Assistants. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLRS 332, CLRS 403, CLRS 403 and permission of instructor. Promotes an understanding of methods and techniques for the systematic observation of static and dynamic diagnostic images for the purpose of evaluating the presence of abnormalities, anomalies and pathological conditions. Includes protocols for drafting memoranda of initial observations based on image assessment.

**CLRS 480. Applied Radiology Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: departmental approval. Relates basic concepts in management to the radiologic environment and explores the relationship between the radiologic facility and the health care system.

**CLRS 481. Applied Pharmacology for Radiation Sciences. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: departmental approval. Covers general pharmacology including the study of drug groups, dosages, administrations and reactions of drugs common to patients. Special emphasis on contrast media and other agents commonly used in medical imaging and therapy.

**CLRS 488. Senior Seminar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: senior standing in department. Designed to allow students to integrate the various individual courses into a single perspective as it relates to the radiation sciences. Addresses timely professional issues, including the need for lifelong learning and participation in professional organizations, as well as preparing for certification and future employment.

**CLRS 492. Directed Study: Radiation Sciences. 1-4 Hours.**

Semester course; 1-4 credits. Maximum of 6 credits can apply to graduation requirements. Prerequisite: permission of department chair. Provides the opportunity for individualized research projects, tutorial studies, special clinical work or other topics not available in formal course work.



**CLRS 493. Clinical Education IV. 1-5 Hours.**

Semester course; variable clinical hours (120 hours per credit). 1-5 credits. Prerequisite: CLRS 395 with a minimum grade of C. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain additional practical experience in routine, basic and advanced procedures.

**CLRS 494. Clinical Education V. 1-5 Hours.**

Semester course; variable clinical hours (120 hours per credit). 1-5 credits. Prerequisite: CLRS 493 with a minimum grade of C. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain additional practical experience in routine, basic and advanced procedures.

**CLRS 498. Senior Project. 2 Hours.**

Semester course; 2 credits. Prerequisites: CLRS 390, 398 and senior standing in department. Provides students the opportunity to investigate a topic of special interest in their area of concentration. Emphasizes the application of research concepts in the design, implementation and presentation of a project under the supervision of a faculty adviser.

**Clinical Radiation Sciences Lab (CLRZ)****CLRZ 201. Radiographic Imaging and Exposure I Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prerequisite: CLRS 205. Pre- or corequisite: CLRS 201. Designed to introduce students to the fundamentals of radiographic image production. Requires performance of laboratory exercises to become familiar with equipment operation and manipulate radiation exposure variables to produce quality images.

**CLRZ 321. Nuclear Medicine Physics and Instrumentation Laboratory I. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: CLRS 303. Corequisite: CLRS 321. Presentation of the applications and techniques employed in the operation of nuclear medicine non-imaging devices. Labs will emphasize the use of survey meters, dose calibrator and scintillation counting device.

**CLRZ 322. Nuclear Medicine Physics and Instrumentation Laboratory II. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prerequisites: CLRS 321 and CLRZ 321 with a minimum grade of C in both. Corequisite: CLRS 322. Evaluation of applications of different imaging techniques and computer processing utilized in nuclear medicine. Emphasizes the use of single and multiple channel analyzers, planar and SPECT acquisition, and image processing.

**CLRZ 403. Advanced Patient Care for the Imaging Professional. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prerequisite: CLRS 208 or permission of instructor. Pre- or corequisite: CLRS 403. This course provides simulated experience in performing advanced patient care techniques related to the radiation sciences. Topics include cardiac rhythm interpretation, advanced cardiac life support, urinary catheterization, tracheostomy care, basic laboratory skills, basic respiratory therapy skills, pulse oximetry, IV therapy and pharmacology, and conscious sedation.

**CLRZ 405. Principles of Mammography Lab. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prerequisites: CLRS 201 and CLRS 320, or permission of instructor. Pre- or corequisite: CLRS 405. Provides simulated experience in performing positioning of the breast. Students will be expected to demonstrate competence in positioning the breast phantom for a variety of routine and specialized projections. In addition, quality control procedures specific to mammography will be performed.

**CLRZ 461. Radiopharmacy Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prerequisites: CLRS 319, CLRS 322 and CLRZ 322, all with a minimum grade of C. A simulated radiopharmacy laboratory will focus on operation of laboratory equipment in the compounding of radiopharmaceuticals.

**Gerontology (GRTY)****GRTY 410. Introduction to Gerontology. 3 Hours.**

3 credits. A survey of the field of aging with attention to physical, psychological, social, economic and cultural ramifications of age.

**Health Care Management (HCMG)****HCMG 300. Health Care Organization and Services. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines the structure and function of the U.S. health services delivery system. Examines the role and responsibilities of health care professions and occupations, technology and financing arrangements in the delivery system.

**Patient Counseling (PATC)****PATC 410. Basic Patient Counseling. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Provides an intensive course of study toward the development of pastoral skills in the hospital context. Assigns students to selected clinical areas with faculty supervision. Utilizes group process and individual supervision for the review of clinical material.

**Rehabilitation Counseling (RHAB)****RHAB 201. Introduction to Rehabilitation Services. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course has been designed to expose the student to the history and development of the rehabilitation movement. Topics explored include basic concepts and philosophies of rehabilitation, psychological and vocational adjustments of the disabled, and an examination of selected rehabilitation methods.

**RHAB 202. General Substance Abuse Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is designed to help the student develop an appreciation of society's attitude about the use of drugs and alcohol, and each individual's responsibility in decisions about the use of drugs. Discussion is offered on specific characteristics of drugs, how addiction occurs and role of rehabilitation after addiction.

**RHAB 321. Introduction to Substance Abuse. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: RHAB 202. Introduction to substance abuse as a progressive family disease with consideration of basic contributing factors (physiological, psychological and sociocultural builds on foundation established in RHAB 202); exposure to multidisciplinary rehabilitative approaches to arresting the disease, as well as some knowledge of intervention; brief mention of the highlights of the continuum of care available in the recovery process.

**RHAB 452. Crisis Intervention with the Substance Abuser. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: RHAB 321, RHAB 322 and RHAB 523, or permission of instructor. Focus on the application of concepts discussed in theory in the recovery process course; sharing of difficulties and successes with crisis intervention by individuals already in the field; provision of new and more refined techniques under the direction of experts demonstrating their applicability.

**RHAB 495. Practicum in Rehabilitation. 6,9 Hours.**

Semester course; 3 credits. Prerequisite: permission of instructor. Designed to provide opportunities for observation and participation in rehabilitation and related settings. Experiences are systematically related to theoretical concepts.



## School of the Arts

### Advanced Media Production Technology (AMPT)

#### AMPT 401. Listen and Capture. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Foundational studio course in audio production that covers acoustics, audio physics and history, and equipment and technologies used in recording and editing.

#### AMPT 402. Editorial Storytelling. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Introductory studio course on motion visual editing techniques, exploring non-linear editing software, film editing history, color techniques, and basic visual effects including animation.

#### AMPT 403. Emerging Digital Cinema. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Studio course that explores how traditional film and video production has been transformed by new technologies, including DSLR and high resolution RED cameras, teleprompting, green screen techniques.

#### AMPT 404. Script. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Studio course on screen writing and story development, exploring traditional linear and non-linear plot development.

#### AMPT 422. Audio for Gaming. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Studio course that focuses on proper recording and formatting of music and sound effects within the context of video game production.

#### AMPT 423. Motion Graphics. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Studio course that focuses on visual effects including titles, preparing clips for a video editor, and generating computer based animation.

#### AMPT 424. Music Production Techniques. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Studio course that explores music production for modern styles of popular and alternative acoustic music, particularly virtual instruments, loops and vocal production techniques.

#### AMPT 425. Light. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Studio course that examines lighting requirements for digital media, exploring lighting design and techniques in the context of video production.

#### AMPT 426. Foley and Sound Design. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Studio course that explores adding sound created by actors and audio engineers to picture, focusing on the use of both traditional techniques and current digital audio workstation software.

#### AMPT 495. Sound Manipulation. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: AMPT 401. Studio course that focuses on the live audio recording process, covering sound design, foley techniques, and use and maintenance of relevant sound equipment.

#### AMPT 496. Finishing the Story. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: AMPT 402. Studio course that expands on the concepts previously covered in prerequisite course for students concentrating in video post-production, further exploring the technology of high-definition and digital cinema.

#### AMPT 497. Mastering Digital Cinema. 3 Hours.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: AMPT 403. Studio course that builds on concepts explored in prerequisite course for students in the production concentration, further exploring how traditional film and video production has been transformed by new technologies.

### Applied Lessons (APPL)

#### APPL 200. Applied Lessons. 1 Hour.

Semester course; half-hour weekly private lesson plus daily practice. 1 credit. May be repeated for a total of 8 credits. Previous experience and ability to read music required. Additional fee for course required. Private applied lessons for musical instruments. Consult the music department for appropriate section.

#### APPL 310. Applied Lessons. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. May be repeated for a total of 8 credits. For music majors only. Permission of chair required. Applied lessons for principal performing medium. Consult the music department for appropriate section.

#### APPL 311. Applied Lessons. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. For music majors only. Corequisite: APPM 299 (except jazz studies majors). Applied lessons for principal performing medium proficiency Level I. Jury required. Consult adviser for appropriate course and section.

#### APPL 312. Applied Lessons. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. For music majors only. Prerequisite: APPL 311 with a minimum grade of C. Corequisite: APPM 299 (except jazz studies majors). Applied lessons for principal performing medium proficiency Level II. Jury required. Consult adviser for appropriate course and section.

#### APPL 313. Applied Lessons. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. For music majors only. Prerequisite: APPL 312 with a minimum grade of C. Corequisite: APPM 299 (except jazz studies majors). Applied lessons for principal performing medium proficiency Level III. Jury required. Consult adviser for appropriate course and section.

#### APPL 314. Applied Lessons. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. For music majors only. Prerequisite: APPL 313 with a minimum grade of C. Corequisite: APPM 299 (except jazz studies majors). Applied lessons for principal performing medium proficiency Level IV. Jury required. Consult adviser for appropriate course and section.

#### APPL 320. Applied Lessons Secondary Instrument. 1 Hour.

Semester course; half-hour weekly private lesson plus daily practice. 1 credit. May be repeated for a total of 4 credits. Open to music majors only. Private applied lessons for secondary instrument requirement. Consult music department for appropriate section.

#### APPL 321. Applied Lessons Secondary Instrument. 2 Hours.

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. Open to music majors only. Corequisite: APPM 299. Applied lessons for secondary performing medium proficiency Level I. Jury required. Consult adviser for appropriate course and section.

**APPL 322. Applied Lessons Secondary Instrument. 2 Hours.**

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. Open to music majors only. Prerequisite: APPL 321 with a minimum grade of C. Corequisite: APPM 299. Applied lessons for secondary performing medium proficiency Level II. Jury required. Consult adviser for appropriate course and section.

**APPL 323. Applied Lessons Secondary Instrument. 2 Hours.**

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. Open to music majors only. Prerequisite: APPL 322 with a minimum grade of C. Corequisite: APPM 299. Applied lessons for secondary performing medium proficiency Level III. Jury required. Consult adviser for appropriate course and section.

**APPL 324. Applied Lessons Secondary Instrument. 2 Hours.**

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. Open to music majors only. Prerequisite: APPL 323 with a minimum grade of C. Corequisite: APPM 299. Applied lessons for secondary performing medium proficiency Level IV. Jury required. Must earn a minimum grade of C. Consult adviser for appropriate course and section.

**APPL 415. Applied Lessons. 2 Hours.**

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. For music majors only. Prerequisite: APPL 314 with a minimum grade of C. Corequisite: APPM 299. Applied lessons for principal performing medium proficiency Level V. Jury required. Consult adviser for appropriate course and section.

**APPL 416. Applied Lessons and Junior Recital. 2 Hours.**

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. For music majors only. Prerequisite: APPL 415 with a minimum grade of C. Corequisite: APPM 299. Applied lessons for principal performing medium proficiency Level VI. Recital required. Consult adviser for appropriate course and section.

**APPL 417. Applied Lessons. 2 Hours.**

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. For music majors only. Prerequisite: APPL 416 with a minimum grade of C. Corequisite: APPM 299. Applied lessons for principal performing medium proficiency Level VII. Jury required. Consult adviser for appropriate course and section.

**APPL 418. Applied Lessons and Senior Recital. 2 Hours.**

Semester course; one-hour weekly private lesson plus daily practice. 2 credits. For music majors only. Prerequisite: APPL 417 with a minimum grade of C. Corequisite: APPM 299. Applied lessons for principal performing medium proficiency Level VIII. Recital required. Must earn a minimum grade of C. Consult adviser for appropriate course and section.

**Applied Music (APPM)****APPM 126. Keyboard Skills Applied Lesson. 1 Hour.**

Semester course; half-hour lesson per week. 1 credit. Repeatable for a maximum total of 3 credits. Open only to music majors. Acquisition of keyboard performance skills with emphasis on sight reading, keyboard harmony and improvisation.

**APPM 161. Lyric Diction. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisite: completion of APPM 161 to enroll in APPM 162. A study of English, Italian, ecclesiastical Latin, French and German stage diction with practical experience in singing and phonetic transcription using the International Phonetic Alphabet.

**APPM 162. Lyric Diction. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisite: completion of APPM 161 to enroll in APPM 162. A study of English, Italian, ecclesiastical Latin, French and German stage diction with practical experience in singing and phonetic transcription using the International Phonetic Alphabet.

**APPM 173. Keyboard Skills I. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Open only to music majors. Initial placement in course sequence determined by proficiency audition. Acquisition of keyboard performance skills with emphasis on sight reading, keyboard harmony and improvisation.

**APPM 174. Keyboard Skills II. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prerequisite: APPM 173. Open only to music majors. Initial placement in course sequence determined by proficiency audition. Acquisition of keyboard performance skills with emphasis on sight reading, keyboard harmony and improvisation.

**APPM 199. Recital/Convocation Attendance. 0 Hours.**

Semester course; no credit. Course may be repeated without limit. Music majors only. Attendance at weekly departmental convocations and a minimum of 10 additional concerts or recitals each semester.

**APPM 251. Jazz Improvisation I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 147. A study of basic compositional techniques that can be used in creating a musically effective improvised solo in the jazz medium.

**APPM 252. Jazz Improvisation II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: APPM 251. Advanced melodic, harmonic and rhythmic improvisational techniques as applied to contemporary jazz compositions.

**APPM 272. Jazz Piano for the Non-keyboard Player. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prerequisites: APPM 174 and MHIS 147. Acquisition of jazz keyboard performance skills with emphasis on reading, harmonization and improvisation.

**APPM 273. Keyboard Skills III. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prerequisite: APPM 174. Open only to music majors. Initial placement in course sequence determined by proficiency audition. Acquisition of keyboard performance skills with emphasis on sight reading, keyboard harmony and improvisation.

**APPM 299. Master Class. 0 Hours.**

Semester course; no credit. Course may be repeated without limit. Participation in weekly master classes in student's applied major area.

**APPM 309. Applied Composition. 1 Hour.**

Semester course; one-hour weekly private lesson. 1 credit. May be repeated for a total of 4 credits. Prerequisite: MHIS 245. For music majors only. A structured approach to composing music from exercises and studies to complex large forms.

**APPM 310. Applied Jazz Composition. 1 Hour.**

Semester course; one-hour weekly private lesson. 1 credit. May be repeated for a total of 4 credits. Prerequisite: MHIS 245. For music majors only. A structured approach to composing music in the jazz idiom, including small and large ensemble formats.

**APPM 350. Vocal Coaching. 1,2 Hour.**

Semester course; one-half- or one-hour weekly private lessons plus daily practice. 1 or 2 credits. May be repeated for a total of 12 credits. Restricted to music majors. Corequisite: applied voice. Detailed exploration of historical musical style; diction skills for Italian, French, German, Spanish and English; audition techniques; and dramatic interpretation.

**APPM 355. Orchestra. 1 Hour.**

Semester course; 3 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Provides an opportunity to rehearse and perform works from the symphonic repertoire while improving ensemble skills.

**APPM 356. Symphonic Wind Ensemble. 1 Hour.**

Semester course; 3 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Ensemble performs a variety of contemporary wind ensemble repertoire as well as standards. Ensemble performs multiple times throughout the semester and at off-campus events. In addition to rehearsals, weekly one-hour sectionals are required.

**APPM 357. University Band. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to all students who play wind or percussion instruments. The class does not require an audition for participation. Ensemble preparation intended for a single performance each semester.

**APPM 358. Commonwealth Singers. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Rehearsals focus on the development of individual and group vocal technique, musicianship and communication relevant to repertoire prepared.

**APPM 359. Choral Arts Society. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. A large, nonauditioned chorale open to all university students with choral experience. Ensemble will prepare and perform a variety of choral literature each semester.

**APPM 360. Jazz Orchestra. 1 Hour.**

Semester course; 3 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Ensemble performs a range of contemporary and historical styles and performs multiple times throughout the semester. In addition to rehearsals, weekly one-hour sectionals are required.

**APPM 361. Small Jazz Ensemble. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Jazz ensembles of typically five to nine players rehearse and prepare existing repertoire and student compositions. Independent problem-solving and ensemble-playing skills developed through weekly rehearsals and coaching.

**APPM 362. Accompanying: Piano. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 2 credits. For piano majors only. The development of skills in piano accompaniment of vocal and instrumental performance. Coaching and guidance will include harmonic voicing, sound coloring, balance issues, pedaling and score reduction.

**APPM 363. Flute Choir. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission. Conducted ensemble rehearses and prepares repertoire.

**APPM 364. Guitar Ensemble. 1 Hour.**

Semester course; 2.5 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to guitar music majors or by permission; audition required. Biweekly rehearsals prepare this ensemble of 20-25 guitarists for performances of repertoire from the Renaissance to newly composed and arranged works.

**APPM 365. Aural Skills V. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prerequisites: MHIS 246. Open to music majors only. Advanced development of skills in melodic and rhythmic dictation, harmonic identification and sight singing.

**APPM 366. Aural Skills VI. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prerequisites: MHIS 246. Open to music majors only. Advanced development of skills in melodic and rhythmic dictation, harmonic identification and sight singing.

**APPM 367. Piano Ensemble. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Small chamber ensemble in which piano shares leading or equal role rehearses and prepares repertoire. Groups will rehearse weekly and receive at least three or four coaching sessions per semester.

**APPM 368. Woodwind Ensemble. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Chamber ensembles of two to 13 players, involving woodwinds and often other instruments. Coached by various music faculty on a weekly basis.

**APPM 369. Percussion Ensemble. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Small ensembles of three to six players rehearse primarily non-conducted repertoire for semester performances. Weekly rehearsals with coaching from instructor designed to address musicianship, chamber ensemble skills, rehearsal technique and familiarity with contemporary performance practices.

**APPM 370. Large Ensembles. 1 Hour.**

Semester course; 3 laboratory hours. 1 credit. Each section may be repeated up to eight times for credit. An audition is prerequisite for sections 1, 3 and 4. Sections: (1) orchestra, (2) University Band, (3) symphonic wind ensemble, 4) Commonwealth Singers, (5) Choral Arts Society.

**APPM 371. String Chamber Music. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. String chamber involving two to five players rehearse and prepare repertoire. Independent problem-solving and ensemble-playing skills are developed through weekly rehearsals and coaching.

**APPM 372. Brass Ensemble. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 8 credits. Open to music majors or by permission; audition required. Chamber ensembles of three to five players, involving various combinations of brass instruments. Coached by various music faculty on a weekly basis.

**APPM 373. Advanced Keyboard Skills I. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. For piano majors only. Emphasis is on harmonization with correct style and voice-leading, reading figured bass and lead sheets, improvisation and reducing scores at the keyboard.

**APPM 374. Advanced Keyboard Skills II. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prerequisite: APPM 373. For piano majors only. Emphasis is on harmonization with correct style and voice-leading, reading figured bass and lead sheets, improvisation and reducing scores at the keyboard.

**APPM 375. Score Reading. 1 Hour.**

Continuous courses; 2 laboratory hours. 1-1 credit. Prerequisites: APPM 274; completion of APPM 375 to enroll in APPM 376. Acquisition of skill in reducing scores at the keyboard, beginning with simple three-part works and progressing to full instrumentation.

**APPM 376. Score Reading. 1 Hour.**

Continuous courses; 2 laboratory hours. 1-1 credit. Prerequisites: APPM 274; completion of APPM 375 to enroll in APPM 376. Acquisition of skill in reducing scores at the keyboard, beginning with simple three-part works and progressing to full instrumentation.

**APPM 377. Vocal Chamber Ensemble. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of 3 credits. Open to music majors or by permission; audition required. Variable sized non-conducted ensembles receive weekly coaching in preparation for performances. Ensembles will seek to build proficiency in musicianship skills, reading ability, performance practices and interpretative technique in a variety of styles.

**APPM 378. Women's Choir. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Repeatable to fulfill degree requirements. Open to music majors or by permission; audition required. Ensemble rehearses and prepares repertoire for performance. Women's choir is open to female university students with previous choral experience.

**APPM 381. Conducting. 2 Hours.**

Semester course; 1 lecture and 2 laboratory hours. 2 credits. Prerequisite: MHIS 246. Development of fundamental gestural skills for conducting instrumental and choral ensembles including simple and compound meters, multimetric music and aleatoric music. Introduces basic score reading, aural analysis skills and terminology.

**APPM 385. Opera Theatre. 2 Hours.**

Semester course; 1 lecture and 4 studio hours. 2 credits. May be repeated for a total of 16 credits. Permission of instructor required. Explores aspects of opera through study, written research and fully staged public performances of operatic scenes and/or one-act operas.

**APPM 390. Small Ensembles. 0.5,1 Hours.**

Semester course; 2 or 3 laboratory hours. 0.5 or 1 credit. Each section may be repeated up to eight times for credit. Auditions required for all sections. Sections: (1) ensemble for new music, (2) the madrigalists, (3) collegium musicum, (4) women's chorus, (5) vocal ensembles, (6) piano ensembles, (7) accompanying, (8) percussion ensemble, (9) percussion lab ensemble, (10) woodwind ensembles, (11) brass ensembles, (12) chamber orchestra, (13) string ensembles, (14) guitar ensembles, (15) small jazz ensembles, (16) jazz orchestra I, (17) jazz orchestra II, (18) jazz orchestra III, (19) basketball pep band.

**APPM 463. Pedagogy. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. A study of the musical, physiological and psychological aspects of teaching instruments or voice.

**APPM 464. Piano Pedagogy Practicum. 2 Hours.**

Semester course; 1 lecture and 1 laboratory hour. 2 credits. Prerequisites: MHIS 304 and APPM 463 (piano). An advanced study of piano pedagogy with a supervised teaching component.

**APPM 492. Senior Project: Portfolio Review. 1 Hour.**

Semester course. 1 credit. Prerequisites: APPL 416 for performance majors or APPL 314 for B.A. degree students, senior standing and a minimum of 18 credits in 300- or 400-level courses. A capstone experience integrating resume preparation and professional development within the field of music. Documentation of creative activities and achievements accumulated during music studies is compiled for a portfolio review.

**APPM 493. Music Internship. 1-4 Hours.**

Semester course; Variable hours. 1-4 credits. May be repeated for a maximum of 4 credits. Prerequisites: open to music majors with junior standing, 3.0 GPA in major course work and minimum of 2.5 overall GPA, plus consent of coordinator and department chair. Provides full- or part-time professional field experience with approved organizations/ individuals. Areas for the internship include (but are not limited to) music publication and production, arts administration and promotion, arts management, entertainment law, presentations and research, instrument repair, recording techniques, composition and arranging, and/ or performance opportunities. Graded as S/U.

## Art Education (ARTE)

**ARTE 250. Computer Technology in Art Education. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. For art education majors only. The use of computer as a tool for creating electronic imagery, as a filtering mechanism for traditional media and to develop teaching materials for the pre-K through 12th-grade classroom. The course includes an introduction to presentation technology, digital imaging and Web page design. Ethical and copyright issues related to new technologies will be addressed.

**ARTE 301. Art for Elementary Teachers. 3 Hours.**

Continuous courses; 1 lecture, 1 seminar and 2 studio hours. 3-3 credits. Prerequisite: completion of ARTE 301 to enroll in ARTE 302. The nature of art and its function in the lives of individuals and society is considered in addition to materials and methods for guiding the visual expression of children.

**ARTE 302. Art for Elementary Teachers. 3 Hours.**

Continuous courses; 1 lecture, 1 seminar and 2 studio hours. 3-3 credits. Prerequisite: completion of ARTE 301 to enroll in ARTE 302. The nature of art and its function in the lives of individuals and society is considered in addition to materials and methods for guiding the visual expression of children.

**ARTE 310. Foundations of Art Education. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. For art education majors only or by approval of the department chair. An examination of art education within the curricular structure of educational programs and the developmental growth of children. Students will explore the historical, philosophical and sociological foundations of art in education, including art education's development and current roles.

**ARTE 311. Art Education Curriculum and Instructional Procedures. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: ARTE 310. For art education majors only. A study of the principles of learning, instruction and curriculum in art education programs. Students will develop teaching competencies through micro-teaching experiences, analysis of instructional methods and writing units of study.



**ARTE 401. Art Education Elementary Materials and Practicum. 4 Hours.**

Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisites: UNIV 200 or HONR 200, admission to the art teacher preparation program and completion of ARTE 311. For art education majors only or by the approval of the department chair. A preparatory experience with observation and participation in art programs in elementary grades prior to student teaching. This course explores art materials, techniques and teaching methods suitable for this level; and analyzes evaluation strategies appropriate for art.

**ARTE 402. Art Education Secondary Materials and Practicum. 4 Hours.**

Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisites: admission to the art teacher preparation program and completion of ARTE 311. For art education majors only or by approval of department chair. A preparatory experience with observation and participation in art programs in middle school, secondary school and nontraditional settings prior to student teaching. This course explores art materials and techniques suitable for these levels, examines developmental performance levels and analyzes evaluation methods appropriate for art. Writing intensive.

**ARTE 404. Clinical Internship Seminar. 1 Hour.**

Semester course; 1 seminar hour. 1 credit. Corequisites: TEDU 485 and 486. For art education majors only. Capstone experience. A seminar concurrent with clinical internship (student teaching) that gives students an opportunity to discuss and evaluate their progress in teaching assignments and other related activities.

**ARTE 407. Photography in Art Education. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. A general introduction to the technical, theoretical and historical issues related to photography. Taught as a seminar and workshop teaching both digital and traditional camera functions, photographic terms, concepts, history, technique and alternative processes applicable to K-12 education.

**ARTE 408. Two-dimensional Art Experiences. 3 Hours.**

Semester course; 1 seminar and 4 studio hours. 3 credits. Open to art education majors only. Students will explore the two-dimensional traditional and emerging media that are relevant to teaching. The focus will be contemporary methods and conceptual approaches to visual meaning-making.

**ARTE 409. Three-dimensional Art Experiences. 3 Hours.**

Semester course; 1 seminar and 4 studio hours. 3 credits. Open to art education majors only. Students will explore the three-dimensional traditional and emerging media that are relevant to teaching. The focus will be contemporary methods and conceptual approaches to visual meaning-making.

**ARTE 450. Art for the Exceptional Student. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: ARTE 311. For art education majors only. A study of the unique characteristics of exceptional students as related to involvement in the arts. The course examines disabled, aged, gifted, talented and other exceptional learners, and may include practicum and field experiences.

**ARTE 491. Special Topics. 3 Hours.**

Semester course; variable hours. Variable credit. May be repeated for a maximum of 9 credits with different content. A seminar and/or workshop offered on a variety of art education issues not included in the regular curriculum. See the Schedule of Classes for specific topics to be offered each semester.

**ARTE 492. Independent Study. 1-6 Hours.**

Semester course; variable hours. 1-6 credits per semester. May be repeated for a maximum total of 6 credits. Prerequisites: consent of department chair and instructor. Offered to art education majors only. This course will be limited to those few students who have demonstrated an exceptional level of ability and intense commitment to a particular area.

**ARTE 493. Internship. 1-6 Hours.**

Semester course; variable hours. 1-6 credits. May be repeated for a maximum total of 6 credits. Consent of department chair required. Offered to art education majors only. This service-learning course is designed to encourage students to seek internships with organizations that lead to research in art education and deepen engagement with diverse communities. Students must secure departmental approval for internships the semester prior to registration. International internships must register with the Education Abroad office.

**ARTE 494. International Field Experience. 1-6 Hours.**

Semester course; variable hours. 1-6 credits. Education Abroad application and consent of instructor required. Open to all students. This course is designed to facilitate student interactions with arts organizations in international settings that lead to research in art education and deepen engagement with diverse communities.

**Art Foundation (ARTF)****ARTF 105. Survey of World Art. 4 Hours.**

Continuous courses; 4 lecture hours. 4-4 credits. Prerequisite: completion of ARTF 105 to enroll in ARTF 106. A survey of the history and development of painting, sculpture, architecture and related visual arts of major world cultures, including European, American, Oriental, African, Islamic and pre-Columbian. Offered at VCU Qatar.

**ARTF 106. Survey of World Art. 4 Hours.**

Continuous courses; 4 lecture hours. 4-4 credits. Prerequisite: completion of ARTF 105 to enroll in ARTF 106. A survey of the history and development of painting, sculpture, architecture and related visual arts of major world cultures, including European, American, Oriental, African, Islamic and pre-Columbian. Offered at VCU Qatar.

**ARTF 107. Introduction to the Arts. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. For beginning students in the School of the Arts. Offered to art majors only. An orientation course designed to provide a comprehensive understanding of the role of the visual arts within the university and as a significant contributing factor in the creation of a meaningful human environment.

**ARTF 111. Drawing Studio. 2 Hours.**

Continuous courses; 1 lecture and 3 studio hours. 2-2 credits. Prerequisite: completion of ARTF 111 to enroll in ARTF 112. A foundation course with the emphasis on the formal and conceptual nature of drawing. This course is designed to challenge and develop the student's invention and imagination. Offered at VCU Qatar.

**ARTF 112. Drawing Studio. 2 Hours.**

Continuous courses; 1 lecture and 3 studio hours. 2-2 credits. Prerequisite: completion of ARTF 111 to enroll in ARTF 112. A foundation course with the emphasis on the formal and conceptual nature of drawing. This course is designed to challenge and develop the student's invention and imagination. Offered at VCU Qatar.



**ARTF 115. Art History Survey. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisite: completion of ARTF 115 to enroll in ARTF 116. A survey of the history and development of the visual arts within the contexts of history, geography, politics, religion, economics and the broad social and personal aspects of human culture. Offered at VCU Qatar.

**ARTF 116. Art History Survey. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisite: completion of ARTF 115 to enroll in ARTF 116. A survey of the history and development of the visual arts within the contexts of history, geography, politics, religion, economics and the broad social and personal aspects of human culture. Offered at VCU Qatar.

**ARTF 121. Introduction to Drawing. 2 Hours.**

Continuous courses; 1 lecture and 3 studio hours. 2-2 credits. Prerequisite: completion of ARTF 121 to enroll in ARTF 122. Not for art majors. An introduction to the fundamentals of freehand drawing with an emphasis on representational drawing skills, perception and traditional drawing materials. Does not fulfill Art Foundation Program requirements.

**ARTF 122. Introduction to Drawing. 2 Hours.**

Continuous courses; 1 lecture and 3 studio hours. 2-2 credits. Prerequisite: completion of ARTF 121 to enroll in ARTF 122. Not for art majors. An introduction to the fundamentals of freehand drawing with an emphasis on representational drawing skills, perception and traditional drawing materials. Does not fulfill Art Foundation Program requirements.

**ARTF 131. Drawing Studio. 3 Hours.**

Semester course; 6 studio hours. 3 credits. Open only to first-year fine arts and design majors in the School of the Arts. Drawing A to Z, from pencil to perspective, from sumi ink to skywriting. An intensive drawing studio covering the historic principles of drawing and their place in contemporary practice. Provides an in-depth investigation of line, perspective, the figure, gesture, space, atmosphere, erasure, etc. Through the repeated physical activity of drawing, students will refine their intellectual powers of observation and visualization.

**ARTF 132. Surface Research. 3 Hours.**

Semester course; 6 studio hours. 3 credits. Open only to first-year fine arts and design majors in the School of the Arts. A studio-based course designed to cultivate a student's ability to create and understand two-dimensional imagery. Will include basic principles of design, color and visual organization in traditional, digital and lens-based media. Course content will explore the context of imagery in the larger culture and the potential of art and design.

**ARTF 133. Space Research. 3 Hours.**

Semester course; 6 studio hours. 3 credits. Open only to first-year fine arts and design majors in the School of the Arts. A comprehensive investigation of three-dimensional phenomena in fine art and design. Will cultivate a student's ability to think, perceive, visualize, design and build in three dimensions. Issues of understanding and envisioning space, objects, scale and the relationship of the body to the built environment are subjects of the course. Students will acquire a broad skill set of fabrication techniques and an inquiry into the possibility of 21st-century materials.

**ARTF 134. Time Studio. 3 Hours.**

Semester course; 6 studio hours. 3 credits. Open only to first-year fine arts and design majors in the School of the Arts. Brings together tenets of contemporary practice that have extended the fields of fine art and design. Time-based media such as film, video and sound are included in this mix. The historically underrepresented impulses of theatrically and performance will be explored. Students will use video as a primary tool, but will address larger issues of ephemerality, duration and the possibilities of the moving image.

**ARTF 139. Project. 1-2 Hours.**

Short course (5 weeks); variable hours. 1-2 credits. Open only to first-year fine arts and design majors in the School of the Arts. A seminar or studio on a selected issue, topic or skill in the fields of fine art and design. May be repeated up to maximum of 4 credits.

**ARTF 150. Pre-Art Foundation Studio. 4 Hours.**

Semester course; 6 studio and 2 lecture hours. 4 credits. For students in the Pre-Art Foundation Program in the School of the Arts. Offered to Pre-Art Foundation designees only. A beginning studio course emphasizing the fundamental issues of art and design, such as meaning, context, content and parameters, structure, materials, means of construction, form, space, and light. As the primary studio offering in the Pre-Art Foundation year, this course stresses the development of values that will become a basis for students' actions as professional artists and designers. Introduces students to the values, habits, traditions and expectations of studio culture. Addresses the processes and methods involved in the identification, development and realization of ideas and concepts. Does not fulfill Art Foundation Program requirements.

**ARTF 151. Foundation Studio. 4 Hours.**

Continuous courses; 6 studio and 2 lecture hours. 4-4 credits. Prerequisite: completion of ARTF 151 to enroll in ARTF 152. For first-year students in the School of the Arts. Offered to art majors only. A foundation course with emphasis on fundamental issues of art and design such as meaning, context, content and parameters, structure, materials, means of construction, form, space, and light. As the primary studio offering in the first year, these courses stress the development of values that will become the basis for student's actions as professional artists and designers. Introduces students to the values, habits, traditions and expectations of studio culture.

**ARTF 152. Foundation Studio. 4 Hours.**

Continuous courses; 6 studio and 2 lecture hours. 4-4 credits. Prerequisite: completion of ARTF 151 to enroll in ARTF 152. For first-year students in the School of the Arts. Offered to art majors only. A foundation course with emphasis on fundamental issues of art and design such as meaning, context, content and parameters, structure, materials, means of construction, form, space, and light. As the primary studio offering in the first year, these courses stress the development of values that will become the basis for student's actions as professional artists and designers. Introduces students to the values, habits, traditions and expectations of studio culture.

**ARTF 160. Pre-Art Foundation Drawing. 4 Hours.**

Semester course; 6 studio and 2 lecture hours. 4 credits. For students in the Pre-Art Foundation Program in the School of the Arts. Offered to Pre-Art Foundation designees only. A beginning drawing course offering intense exposure to the basic skills of figure and perspective drawing. Traditional drawing media, the fundamentals of anatomy and the fundamentals of linear perspective are covered. Does not fulfill Art Foundation Program requirements.

**ARTF 161. Figure Drawing I. 1 Hour.**

Short course; 5 studio hours. 5 weeks. 1 credit. For beginning students in the School of the Arts. Offered to art majors only. A foundation course with emphasis on anatomical and figure drawings. Students work in black and white media. Students develop drawing skills as a means of observation and documentation.

**ARTF 162. Perspective and Three-dimensional Line Drawing. 1 Hour.**

Short course; 5 studio hours. 5 weeks. 1 credit. For beginning students in the School of the Arts. Offered to art majors only. A foundation course with emphasis on creating the illusion of three dimensions on a two-dimensional plane using black and white media and primarily line work. Introduces perspective and paraline drawing methods as a means of observation and documentation. Students become familiar with techniques and traditions that enable them to understand, articulate and communicate the characteristics of three-dimensional space.

**ARTF 163. Two-dimensional Design Methods. 1 Hour.**

Short course; 5 studio hours. 5 weeks. 1 credit. For beginning students in the School of the Arts. Offered to art majors only. A foundation course with emphasis on two-dimensional content. Emphasizes critical and analytical skills, the creation and manipulation of visual systems, and the development of a fundamental design vocabulary that supports conceptual generation and development.

**ARTF 164. Color Research Laboratory. 1 Hour.**

Short course; 5 studio hours. 5 weeks. 1 credit. For beginning students in the School of the Arts. Offered to art majors only. A foundation course with emphasis on color theory, phenomena, characteristics, classification and the physics of color.

**ARTF 171. Digital Laboratory. 1 Hour.**

Short course; 5 studio hours. 5 weeks. 1 credit. For beginning students in the School of the Arts. Offered to art majors only. A foundation course with emphasis on the generation and manipulation of digital media that support conceptual development.

**ARTF 172. Digital Photography. 1 Hour.**

Short course; 5 studio hours. 5 weeks. 1 credit. Prerequisite: ARTF 171 Digital Lab. For beginning students in the School of the Arts. Offered to art majors only. A foundation course with emphasis on the generation, manipulation and printing of digital media.

**ARTF 173. Three-dimensional Design Methods. 1 Hour.**

Short course; 5 studio hours. 5 weeks. 1 credit. For beginning students in the School of the Arts. Offered to art majors only. A foundation course with emphasis on fundamental means of construction, materials exploration and structural investigations that support conceptual development.

**ARTF 181. Figure Drawing II. 1 Hour.**

Short course; 5 studio hours. 5 weeks. 1 credit. Prerequisite: ARTF 161 Figure Drawing I. For beginning students in the School of the Arts. Offered to art majors only. An advanced foundation course with emphasis on figure drawing. Students work in black and white, and in color media. Students develop drawing skills as a vehicle to document objects and experiences and as a tool for invention.

**ARTF 182. Perspective and Three-dimensional Rendering. 1 Hour.**

Short course; 5 studio hours. 5 weeks. 1 credit. Prerequisite: ARTF 162 Perspective and Three-dimensional Line Drawing. Offered to art majors only. A foundation course that emphasizes the introduction of light, shadow, shading and color into three-dimensional drawings. Introduces these drawing skills as a means of observation, documentation, analysis and invention.

**ARTF 191. Topics in Foundation Studies. 1-4 Hours.**

Short course; variable hours. 5 weeks. 1-4 credits. May not be repeated. Prerequisites: permission of the program director and instructor. A seminar or studio on a selected issue, topic or skill in the field of foundation studies.

**Art History (ARTH)****ARTH 103. Survey of Art I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introductory survey of art from the prehistoric era through the 13th century, including examples from selected regions of Europe, Asia, Africa and the Americas. Illustrated lectures demonstrate visual analysis and other art historical methods while also identifying key monuments and artists' work in relationship to historical contexts.

**ARTH 104. Survey of Art II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introductory survey of art from the 14th century through 21st century, including examples from selected regions of Europe, Asia, Africa and the Americas. Illustrated lectures demonstrate visual analysis and other art historical methods while also identifying key monuments and artists' work in relationship to historical contexts.

**ARTH 207. Introduction to Non-Western Art. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Art will be presented as an integral aspect of each culture from the areas of China, Japan, Africa, Oceania, Native America, and pre-Columbian Central and South America. Aesthetic appreciation will be enhanced through a presentation of various philosophies, customs and values. Illustrated lectures and analytical practices will be supported by the student visiting local museums and galleries to examine selected works of art.

**ARTH 245. Survey of Asian Art. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introductory survey of South Asian, Himalayan, Southeast Asian and East Asian art. Illustrated lectures provide a survey of Asian art and architecture.

**ARTH 260. Islamic Art Survey. 3 Hours.**

Semester course; 3 lecture hours. 3, 3 credits. Prerequisites: ARTH 103 or ARTF 105 or 115 and ARTH 104 or ARTF 106 or 116. First semester: seventh century to 13th century. Second semester: 14th century to the present. Illustrated lectures provide a survey of Islamic art and architecture. Students will visit local museums and galleries to examine selected works of art.

**ARTH 261. Islamic Art Survey. 3 Hours.**

Semester course; 3 lecture hours. 3, 3 credits. Prerequisites: ARTH 103 or ARTF 105 or 115 and ARTH 104 or ARTF 106 or 116. First semester: seventh century to 13th century. Second semester: 14th century to the present. Illustrated lectures provide a survey of Islamic art and architecture. Students will visit local museums and galleries to examine selected works of art.

**ARTH 270. History of the Motion Picture I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The history of development of the motion picture from the early 1800s to the mid-20th century, with both technical and aesthetic consideration. Students engage in analysis and discussion after viewing selected films.

**ARTH 271. History of the Motion Picture II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The history of development of the motion picture from post-WWII to the present, with both technical and aesthetic consideration. Students engage in analysis and discussion after viewing selected films.

**ARTH 291. Special Topics. 1-3 Hours.**

Semester course; 1-3 variable hours. 1-3 credits. May be repeated with different topics for a maximum of 9 credits. An in-depth study of a selected topic in art history not included in the curriculum. See the Schedule of Classes for specific topics to be offered each semester.

**ARTH 300. Prehistoric and Ancient Art and Architecture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103 and UNIV 200 or HONR 200, both with a minimum grade of C. A survey of the artistic expressions of the major prehistoric and ancient cultures of Europe, the Near East, Egypt and the Aegean.

**ARTH 301. Art and Architecture of Ancient North America. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103 and UNIV 200 or HONR 200, both with a minimum grade of C. A survey of the major artistic traditions of ancient America, north of Mexico, including Woodlands, Mississippian, Plains, Eskimo, Northwest Coast and the Southwest.

**ARTH 302. Museums in the 21st Century. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200 with a minimum grade of C. A survey of contemporary theories, issues and practices in the museum environment. Topics include museum identity and function, administration, museum ethics, collections maintenance and management, curatorial and exhibition issues, and education and public interaction.

**ARTH 305. Classical Art and Architecture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103 and UNIV 200 or HONR 200, both with a minimum grade of C. A survey of the development of Greek, Etruscan and Roman architecture, sculpture, painting and the minor arts from their beginnings to the early fourth century A.D.

**ARTH 310. Medieval Art and Architecture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103 and UNIV 200 or HONR 200, both with a minimum grade of C. Survey of Western art and architecture between A.D. 300 and 1400.

**ARTH 311. Islamic Art and the West Before 1200. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 260 and 261. Explores the early development of Islamic and Christian artistic traditions with an emphasis on artistic contact and exchange.

**ARTH 312. Islamic Art and the West From 1200 to 1600. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 260 and 261. Explores the artistic dynamics of the Renaissance with an emphasis on interactions between the Christian and Islamic worlds.

**ARTH 315. Renaissance Art and Architecture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 104 and UNIV 200 or HONR 200, both with a minimum grade of C. An examination of the Renaissance in Italy and Northern Europe. Painting, sculpture and architecture of the 14th, 15th and 16th centuries.

**ARTH 317. History of Architecture. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisites: ARTH 104 and UNIV 200 or HONR 200, both with a minimum grade of C. First semester: major architectural forms from ancient Egypt through Medieval period. Second semester: architecture in Europe and America from the Renaissance to the present.

**ARTH 318. History of Architecture. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisites: ARTH 104 and UNIV 200 or HONR 200, both with a minimum grade of C. First semester: major architectural forms from ancient Egypt through Medieval period. Second semester: architecture in Europe and America from the Renaissance to the present.

**ARTH 320. Baroque and Rococo Art and Architecture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 104 and UNIV 200 or HONR 200, both with a minimum grade of C. The art and architecture of Italy and northern Europe between 1600 and 1750.

**ARTH 321. Islamic Art and the West From 1600 to 1800. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 260 and 261. Explores the Counter-Reformation in light of the Ottoman expansion in Europe and the development of artistic forms that reflect the status quo of the Roman Catholic Church.

**ARTH 325. 19th-century Art and Architecture in Europe. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 104 and UNIV 200 or HONR 200, both with a minimum grade of C. Study of European art and architecture between 1770 and 1900.

**ARTH 330. 20th-century Art and Architecture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 104 and UNIV 200 or HONR 200, both with a minimum grade of C. A survey of 20th-century art with emphasis on architecture, painting and sculpture.

**ARTH 333. Modern Architecture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103, ARTH 104 and UNIV 200 or HONR 200. Open to School of the Arts majors only. An investigation of major architectural periods and achievements in commercial and residential designs from 1850 to the present; tracing the development of the International Style, traditional architecture, the evolution of the skyscraper, Art Nouveau and the works of Henry Hobson Richardson, Louis Sullivan and Frank Lloyd Wright.

**ARTH 335. Pre-Columbian Art and Architecture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103 and UNIV 200 or HONR 200, both with a minimum grade of C. A study of the major artistic traditions of ancient America (i.e., Maya, Aztec and Inca). The course concentrates on Meso-America and the Andean Region.

**ARTH 338. Colonial Art and Architecture of Latin America. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 104 and UNIV 200 or HONR 200, both with a minimum grade of C. A study of the major artistic traditions in Latin America from the 16th to the end of the 18th century.

**ARTH 339. Modern and Contemporary Art and Architecture of Latin America. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 104 and UNIV 200 or HONR 200, both with a minimum grade of C. A study of 19th- and 20th-century art in Latin America focusing on the major movements and artists of Mexico, the Caribbean, Central and South America.

**ARTH 340. Art and Architecture of the United States. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 104 and UNIV 200 or HONR 200, both with a minimum grade of C. A survey of painting, sculpture and architecture from the Colonial period to the present.

**ARTH 341. Architecture of the United States. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103, ARTH 104 and UNIV 200 or HONR 200. Open to School of the Arts majors only. An in-depth investigation of major architectural developments from the Colonial period to the present, including an analysis of European prototypes.

**ARTH 342. African-American Art. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 104 and UNIV 200 or HONR 200, both with a minimum grade of C. A study of the art forms produced by Americans of African origin from the 17th century to the present with an emphasis on contemporary trends in black art. Crosslisted as: AFAM 342.

**ARTH 343. Architecture in Richmond. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103, ARTH 104 and UNIV 200 or HONR 200. History and origins of Richmond-area architecture.

**ARTH 345. The Art of India. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103, ARTH 104 and UNIV 200 or HONR 200. Open to School of the Arts majors only. The Indus Valley civilization through Maurya, Sunga, Kushana, Andhra, Gupta and Pallava periods.

**ARTH 347. Studies in Asian Art. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of 9 credits. Prerequisite: UNIV 200 or HONR 200. Explores the development of Asian artistic traditions in a particular geographic region or specified period. Topics may be an art form or medium, a geographical area, a theme, a function, or a context. May focus on artistic contact and cultural interconnection within a global context. See the Schedule of Classes for specific topics to be offered each semester.

**ARTH 350. African and Oceanic Art. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200 with a minimum grade of C. A study of the architecture, painting, sculpture and civilizations of the major art-producing tribes of West Africa and Oceania from the 13th century to the present. Crosslisted as: AFAM 413.

**ARTH 357. Women, Art and Society. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103, ARTH 104 and UNIV 200 or HONR 200. Open to School of the Arts majors only. A re-examination of a variety of issues concerning women, art and society: the position assigned women within the history of art as it relates to historical place and the aesthetic values of the canon, the gendering of style, patronage, audience and gaze. Through a survey of images of and by women, as well as through an analysis of art historical and critical texts, this course addresses the question: "How are the processes of sexual differentiation played out across the representations of art and art history? Crosslisted as: GSWS 457.

**ARTH 358. African Art and Architecture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. A study of African art and architecture from prehistoric times to the present. Special emphasis is placed on form, content, function and meaning, as well as the impact of African art on modern and African-American art. Crosslisted as: AFAM 358.

**ARTH 359. Studies in Aesthetics, Theory and Criticism of Art. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of 9 credits. Prerequisites: ARTH 103, ARTH 104 and UNIV 200 or HONR 200. Open to School of the Arts majors only. An in-depth examination of selected topics. See the Schedule of Classes for specific topics to be offered each semester.

**ARTH 361. The Human Condition: An Arts Perspective. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Considers both the commonality of the human condition and differentiation among sociological and cultural experiences represented in selected artworks in the permanent collection of the Virginia Museum of Fine Arts.

**ARTH 365. Modern and Contemporary Art I. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisites: ARTH 103, ARTH 104 and UNIV 200 or HONR 200. Open to School of the Arts majors only. First semester: an in-depth examination of art, theory and criticism from 1900-50. Second semester: an in-depth examination of art, theory and criticism since 1960.

**ARTH 366. Modern and Contemporary Art II. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisites: ARTH 103, ARTH 104 and UNIV 200 or HONR 200. Open to School of the Arts majors only. First semester: an in-depth examination of art, theory and criticism from 1900-50. Second semester: an in-depth examination of art, theory and criticism since 1960.

**ARTH 369. Studies in Museum Methods. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of 6 credits. Prerequisites: ARTH 103, ARTH 104 and 302. Open to School of the Arts majors only. An in-depth examination of selected topics. Topics include museum administration, museum ethics, collections maintenance and management, curatorial and exhibition issues, and education. See the Schedule of Classes for specific topics to be offered each semester.

**ARTH 370. History of Animated Film. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 104 and UNIV 200 or HONR 200. The history of animation as an art form, from early experimental to popular culture to independent animation. Design, structure and technique are considered.

**ARTH 372. History of Photography. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Examines the history of photography from its invention in 1839 to contemporary artworks. Illustrated lectures, assigned readings and class discussion cover technical aspects of photography, types of photographic practices and important works of photographic artists.

**ARTH 374. Studies in Film. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of 6 credits. Prerequisite: UNIV 200 or HONR 200. An in-depth examination of selected topics in film. See the Schedule of Classes for specific topics to be offered each semester.

**ARTH 390. Art Historical Methods. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 104 and UNIV 200 or HONR 200. Course further develops critical thinking and writing skills specific to art history through several short written assignments and a final extended written project.

**ARTH 391. Special Topics. 1-3 Hours.**

Semester course; 1-3 variable hours. 1-3 credits. May be repeated with different topics for a maximum of 9 credits. Prerequisite: UNIV or HONR 200. An in-depth study of a selected topic in art history not included in the curriculum. See the Schedule of Classes for specific topics to be offered each semester.

**ARTH 415. Early Italian Renaissance Art and Architecture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 390 with a minimum grade of C. An investigation of painting, sculpture and architecture of the Duecento, Trecento and Quattrocento in Italy.



**ARTH 417. The High Renaissance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 390 with a minimum grade of C. Intensive consideration of the great masters of Italian art in the early 16th century.

**ARTH 425. Neoclassicism, Romanticism, Realism and Impressionism through Fin-de-Siecle. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: ARTH 390 with a minimum grade of C. First semester: a detailed analysis of European art during the first half of the 19th century with special emphasis on French and English painting. Consideration also will be given to artistic and cultural interrelationships marking the transition from the 18th to the 19th century. Second semester: a detailed analysis of European art during the latter 19th century. Consideration also will be given to artistic and cultural interrelationships heralding the transition to the 20th century.

**ARTH 426. Neoclassicism, Romanticism, Realism and Impressionism through Fin-de-Siecle. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: ARTH 390 with a minimum grade of C. First semester: a detailed analysis of European art during the first half of the 19th century with special emphasis on French and English painting. Consideration also will be given to artistic and cultural interrelationships marking the transition from the 18th to the 19th century. Second semester: a detailed analysis of European art during the latter 19th century. Consideration also will be given to artistic and cultural interrelationships heralding the transition to the 20th century.

**ARTH 430. Modern Painting. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 390 with a minimum grade of C. An analysis of the major movements in 20th-century painting.

**ARTH 431. Modern Sculpture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 390 with a minimum grade of C. The evolution of 20th-century sculpture considering major movements and artists.

**ARTH 439. Studies in 20th-century Art. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of 6 credits. Prerequisite: ARTH 390 with a minimum grade of C. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific topics to be offered each semester.

**ARTH 440. Contemporary Art and Architecture of Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 390 with a minimum grade of C. A study of the impact on African art and architecture of Colonialism, urbanization and modernization. Special emphasis is placed on the search for a new identity by contemporary African artists. Crosslisted as: AFAM 440.

**ARTH 444. Studies in the Art of the United States. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of 6 credits. Prerequisite: ARTH 390 with a minimum grade of C. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific topics to be offered each semester.

**ARTH 449. Studies in Asian Art. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of 6 credits. Prerequisite: ARTH 390 with a minimum grade of C. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific topics to be offered each semester.

**ARTH 450. Art and Architecture of Mesoamerica. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 390 with a minimum grade of C. An in-depth study of the artistic traditions of Mesoamerica (i.e., Maya, Aztec and Olmec).

**ARTH 451. Art and Architecture of Andean America. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 390 with a minimum grade of C. An in-depth study of the pre-Columbian art production of the Andean region (i.e., Chavin, Moche and Inca art).

**ARTH 452. Studies in Pre-Columbian Art and Architecture. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of 6 credits. Prerequisite: ARTH 390 with a minimum grade of C. An in-depth examination of selected art and issues of the period (Ancient America). See the Schedule of Classes for specific topics to be offered each semester.

**ARTH 454. Studies in African and Oceanic Art. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of 6 credits. Prerequisite: ARTH 390 with a minimum grade of C. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific topics to be offered each semester.

**ARTH 461. Art and Architecture in Latin America, 1915 to the Present. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 390 with a minimum grade of C. This course studies the finest expressions of modern Latin American art within the context of the arrival of Modernism in art, improved communications and travel, the growth of the middle class, population explosion, industrialization, urbanization, movements for reform and revolution, and the struggle against economic and cultural dependence and homogenization. The course is hemispheric in scope but devotes special attention to Mexico, Brazil and Argentina.

**ARTH 465. Islamic Art and the West From 1800 to 1900. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 260, ARTH 261 and ARTH 390. Examines the art and architecture of the Islamic world during the age of European colonialism.

**ARTH 466. Modern and Contemporary Art in the Middle East. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 260, ARTH 261 and ARTH 390. Focuses on art and architecture in the Middle East in the 20th and 21st centuries. Issues considered include the lives and work of selected artists, architects and designers; artistic media and themes; collecting; and the art market.

**ARTH 489. Topics in Advanced Art History. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated with a different topic for a maximum of 9 credits. Prerequisite: UNIV 200 or HONR 200. An in-depth study of a selected topic in art history not included in the curriculum. See the Schedule of Classes for specific topics to be offered each semester.

**ARTH 490. Senior Seminar in Art History. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 390 with a minimum grade of C. A study of a specific topic, artist, movement or style in a seminar format. Students will produce an extended research project to fulfill the seminar requirements. Fulfills School of the Arts writing intensive requirement.



**ARTH 493. Museum Internship. 3-6 Hours.**

Semester course; 9 to 18 studio hours. 3 to 6 credits. May be repeated with different topics for a maximum of 12 credits. Prerequisites: ARTH 302 and 390, both with a minimum grade of C. Restricted to art history majors only. Fieldwork in a local or regional museum. Topics include museum administration, museum ethics, collections maintenance and management, curatorial and exhibition issues, and education.

**ARTH 497. Directed Research Project. 3 Hours.**

Semester course; 3 credits. May be repeated for a maximum of 6 credits. Prerequisite: ARTH 390 with a minimum grade of C. Advanced individual work on a subject to be formulated in writing by the student and the instructor.

**Arts (ARTS)****ARTS 001. Open Studio Workshop. 0 Hours.**

Semester course; hours to be arranged. No credit.

**ARTS 190. Advanced Workshop, Drawing. 3 Hours.**

Semester course; 1 lecture and 6 studio hours. 3 credits. Must be taken concurrently with ARTS 191 and 192. Special summer workshop in drawing for the freshman applicant whose work shows potential worthy of consideration for advanced placement in September. Students are admitted only by invitation of the dean of the School of the Arts.

**ARTS 191. Advanced Workshop, Design. 4 Hours.**

Semester course; 1 lecture and 9 studio hours. 4 credits. Must be taken concurrently with ARTS 190 and 192. Special summer workshop in design for the freshman applicant whose work shows potential worthy of consideration for advanced placement in September. Students are admitted only by invitation of the dean of the School of the Arts.

**ARTS 192. Advanced Workshop, Art History. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Must be taken concurrently with ARTS 190 and 191. Special summer workshop in art history for the freshman applicant whose work shows potential worthy of consideration for advanced placement in September. Students are admitted only by invitation of the dean of the School of the Arts.

**ARTS 291. Special Topics. 0.5-4 Hours.**

Semester course; variable hours. .5-4 credits. May be repeated with different topics for a maximum of 6 credits. Prerequisite: approval of School of the Arts dean. Open only to School of the Arts students. Topical course offering a variety of subjects not available through an individual department. See the Schedule of Classes for specific topics to be offered.

**ARTS 350. The Creative Economy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines the contribution of creative ideas to the world economy with a focus on where, how and why creative ideas are produced and consumed.

**ARTS 351. Piloting the Enterprise. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduces the language of the creative enterprise, focusing on intellectual property, contracts and negotiations, tracking business performance, and using financial data to improve decision-making.

**ARTS 352. Idea Accelerator. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Exposes students to the processes and methodologies used to transform ideas and opportunities into sustainable business models. Students evaluate business case studies, engage industry professionals and investigate the commercial potential of their creative ideas.

**ARTS 353. Creative Disruption. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Course may be repeated for a maximum of 6 credits. Prerequisite: ARTS 352 or permission of the instructor. Provides a low-risk educational environment for students to develop their own ventures, including a product/service business model, legal considerations, financial and marketing plans and media presence (Web, mobile, social). Students work with a network of mentors from the university and industry.

**ARTS 370. Topics in Art. 3 Hours.**

Semester courses; 3 lecture or 9 studio hours (or combinations thereof). 3, 3 credits. An in-depth study of a selected topic in art. See the Schedule of Classes for specific topics to be offered each semester.

**ARTS 371. Topics in Art. 3 Hours.**

Semester courses; 3 lecture or 9 studio hours (or combinations thereof). 3, 3 credits. An in-depth study of a selected topic in art. See the Schedule of Classes for specific topics to be offered each semester.

**ARTS 375. Message Therapy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Open to arts majors only. Students will learn the skills to craft powerful communication and attract/hold attention and interest. The course offers strategies on how to connect with an audience and effectively communicate about artistic work, promote an event/person/product and tell a story.

**ARTS 391. Special Topics. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. May be repeated with different topics for a maximum of 6 credits. Prerequisite: approval of School of the Arts dean. Open only to School of the Arts students. Topical course offering a variety of subjects not available through an individual department. See the Schedule of Classes for specific topics to be offered.

**ARTS 392. Independent Study (Fall 2014). 1-6 Hours.**

Semester course; variable hours. 1-6 credits. May be repeated for a maximum of 9 credits. Offered to School of the Arts majors only. This course is for students pursuing advanced scholarly or studio projects not addressed by the existing curriculum.

**ARTS 393. CoLab Internship. 1-6 Hours.**

Semester course; variable hours. 1-6 credits. (40 work hours per credit.) May be repeated for a maximum of 12 credits. A practicum that provides students with experience in hands-on research and innovative problem-solving. Emphasis is on the collaborative development and commercial application of products that focus on emerging technologies. Internship details are determined by supervising professor(s) and project adviser(s).

**ARTS 430. Guided Study Afield. 1-9 Hours.**

1-9 credits. Prerequisite: permission of instructor required. Designed to enhance the student's knowledge by providing first-hand experience with the most significant contribution of aesthetic import within the geographic areas traveled.

**ARTS 491. Special Topics. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. May be repeated with different topics for a maximum of 6 credits. Prerequisite: approval of School of the Arts dean. Open only to School of the Arts students. Topical course offering a variety of subjects not available through an individual department. See the Schedule of Classes for specific topics to be offered.

**ARTS 492. Independent Study. 1-6 Hours.**

Semester course; variable hours. 1-6 credits. May be repeated for a maximum of 9 credits. Offered to School of the Arts majors only. This course is for students pursuing advanced scholarly or studio projects not addressed by the existing curriculum.

**ARTS 493. Internship. 1-6 Hours.**

Semester course; variable hours. 1-6 credits. (30-40 work hours per credit.) May be repeated for a maximum of 9 credits. Prerequisites: junior standing in the School of the Arts and permission of department chair. A practicum that provides students with valuable hands-on experience. Internship details are to be worked out and agreed upon by supervising professor, department chair and internship employer. A grade of PR will be assigned for an internship that extends past the grading period.

**Cinema (CINE)****CINE 100. Visual Storytelling. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Screenplay and mise en scene course examines the relationship of the performer and narrative to the cinematic frame without the use of an edit to disrupt the time/space relations in the shot. The student will write seven short scripts to explore the classical mise en scene concept and then produce, shoot or direct a final scene as part of a production team.

**CINE 101. Visual Storytelling. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Screenplay and mise en scene course examines the relationship of the performer and narrative to the cinematic frame with the use of linkage editing. The student will write a new script based on a classic scene and, working with performers, will block, shoot and edit their scene. The editing will consist of no more than four cuts.

**CINE 200. Cinema Form and Concept I. 2 Hours.**

Semester course; 2 lecture and 2 studio hours. 2 credits. Open only to B.A. in Cinema majors or with permission of instructor. Concepts, issues and processes involved in feature and short-form narrative filmmaking.

**CINE 201. Cinema Form and Concept II. 2 Hours.**

Semester course; 2 lecture and 2 studio hours. 2 credits. Open only to B.A. in Cinema majors or with permission of instructor. Concepts, issues and processes involved in feature and short-form narrative screenwriting and filmmaking.

**CINE 300. Cinema Form and Concept III. 2 Hours.**

Semester course; 2 lecture and 1 studio hours. 2 credits. Prerequisite: UNIV 200 or HONR 200. Open only to B.A. in Cinema majors or with permission of instructor. Concepts, issues and processes involved in feature and short-form narrative filmmaking including screenplay treatments and storyboards.

**CINE 301. Cinema Form and Concept IV. 2 Hours.**

Semester course; 2 lecture and 1 studio hours. 2 credits. Open only to B.A. in Cinema majors or with permission of instructor. Concepts, issues and processes involved in feature and short-form narrative filmmaking including the roles of dialogue and light.

**CINE 390. Digital Cinema Production Intensive I. 15 Hours.**

Semester course; 30 lecture and 10 studio hours. Additional evening and weekend hours for location filming and postproduction. 15 credits. Prerequisites: CINE 200 and 201 or permission of instructor. Open only to B.A. in Cinema majors or with permission of instructor. Production and postproduction of narrative short films using digital technology for camera, editing and sound, with an emphasis on the relationships among production crew roles and departments.

**CINE 392. Independent Study in Film. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of 6 credits. Prerequisites: junior standing as a major in cinema and approval of department chair and instructor. Individual instruction and supervision of a special project.

**CINE 401. Advanced Cinema Production. 4 Hours.**

Semester course; 2 lecture and 4 studio hours. 4 credits. Prerequisite: CINE 390 or permission of instructor. Open to junior and senior B.A. in Cinema majors. Lecture and workshop in the production, theory, business and historical context of film.

**CINE 490. Digital Cinema Production Intensive II. 15 Hours.**

Semester course; 30 lecture hours and 10 studio hours. Additional evening and weekend hours for location filming and postproduction. 15 credits. Prerequisites: CINE 300, 301 and 390 or permission of instructor. Open only to B.A. in Cinema majors or with permission of instructor. Advanced production and postproduction of narrative short films using digital technology for camera, editing and sound, with the development of budgets, production schedules and rehearsals with performers.

**CINE 491. Special Topics in Cinema. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated for 6 credits. Prerequisites: ARTH 270 and 271 or permission of instructor. An in-depth examination of selected topics. See the Schedule of Classes for specific topics to be offered each semester.

**CINE 493. Film Internship. 3 Hours.**

Semester course; variable hours. 3 credits. May be repeated up to a maximum of 6 credits. Open only to B.A. in Cinema majors or with permission of instructor. Supervised work experience related to the film industry.

**CINE 495. Cinema as Art. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 270 and 271 or permission of instructor. An analysis of cinema as art, image, narrative and philosophy.

**CINE 496. Advanced Screenwriting Seminar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CINE 390. Open to junior and senior B.A. in Cinema majors. A study of the screenwriting process and writers on the subject including Aristotle, Joseph Campbell, David Mamet and Lajos Egri.

**CINE 497. Expanded Cinema. 3 Hours.**

Semester online course; 3 lecture hours. 3 credits. Open to junior and senior B.A. in Cinema majors or with permission of instructor. A lecture and workshop exploring film techniques that push the boundaries of conventional narratives through structure, content and ideas. Students examine filmmakers as film theorists and multimedia artists as filmmakers. Films studied range from feature narratives to short experimental films of all styles and genres.

**Communication Arts (COAR)****COAR 200. Visual Studies: Drawing. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: ARTF 131. A course in drawing from direct observation of specific references: visual analysis, surface light and color, structure, and context. Various painting and drawing media will be explored. Assignments will incorporate applicable references to the history of art and contemporary developments.

**COAR 201. Drawing Studies: The Figure Observed. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: successful completion of the Art Foundation Program. Students will study and explore how to draw from direct observation using the figure as the primary means to understand proportion, volume and spatial relationships. Class will include skeletal structure, basic anatomy and physical aspects of the figure. Various drawing and painting media will be explored. Specific assignments will be informed by the reference and use of the figure in the history of art and contemporary developments.

**COAR 202. Drawing Studies: The Figure in Context. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 201. Drawing from direct observation using the figure as the primary means to understand proportion, volume and spatial relationships. Specific problems will include the figure as a dynamic element in different lighting, spatial and conceptual contexts. Various drawing and painting media will be explored. Assignments will incorporate applicable references to the history of art and contemporary developments.

**COAR 210. Visual Studies: Design. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: ARTF 132 and 133. A course in which an understanding of the relationship between form and communication is developed. The student will develop an awareness and appreciation for visual imagery as a tool for the transmission of information and ideas.

**COAR 211. Fundamentals of Typography. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: ARTF 132. An introduction to the study of typography as used in communication arts. Course will include the study of hand-drawn and digital letterforms and their context. Students will be introduced to professional digital methods (e.g., Illustrator).

**COAR 230. Introduction to Computer Techniques. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: successful completion of the Art Foundation Program. An introductory workshop in microprocessor hardware operations, software procedures and Internet communication necessary for contemporary communication arts and design practice.

**COAR 300. Illustration: Drawing and Painting. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 202. Explores and addresses formal, conceptual and technical considerations and issues involved in the use of drawing and painting. Various drawing and painting media will be explored.

**COAR 301. Drawing Studies: The Figure (Intermediate). 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for up to 6 credits. Prerequisite: COAR 201. Drawing from direct observation at the intermediate level using the figure as the primary means to understand proportion, volume and spatial relationships. Various drawing and painting media will be explored.

**COAR 302. Print Media. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 202. An intermediate course in the use of printing processes and techniques to develop communicative imagery. Assignments will incorporate applicable references to the history of art and contemporary developments.

**COAR 303. Color Theory and Practice. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 300. An intermediate course in the application of color theory to specific illustrative problems. A number of color theories, both historical and contemporary, will be studied and applied.

**COAR 304. Illustration Media and Techniques. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 200 and 202. Explores various mixed-media techniques, including both two- and three-dimensional approaches to illustrative problems.

**COAR 305. Figure in Illustration I. 4 Hours.**

Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisite: COAR 206. An introduction to the visual representation of the human form as it applies to illustration.

**COAR 307. The Face. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 200 and COAR 202. Employing a variety of drawing media, students will explore the nuances of the human face as a subject. This course focuses on both process and the realization of final projects.

**COAR 311. Type and Image. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 211. An advanced course that explores graphic design as a means to express and communicate ideas. Assignments will incorporate applicable references to the history of art and contemporary developments.

**COAR 312. Art Direction. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 210, 211 and 231. An introduction to the integrated activities of strategy, conceptual development and design.

**COAR 313. Art Direction II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 312. Concept, layout and design of a corporate advertising campaign based on the evaluation of research, market analysis and planning.

**COAR 314. Advertising Concepts I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 312. Focuses on creative thinking and the development of concepts and ideas in problems of art direction.

**COAR 320. Concept Drawing. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 202. Explores the use of drawing as a tool to communicate concepts. Various painting and drawing media will be explored. Assignments will incorporate applicable references to the history of art and contemporary developments.

**COAR 321. Sequential Imaging. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: junior standing in communication arts. Sequential imagery as applied to books, graphic novel and film storyboarding. Various painting and drawing media will be explored. Assignments will incorporate applicable references to the history of art and contemporary developments.

**COAR 325. Botanical Drawing. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 300. This course explores plant life from direct observation and analytical drawing. Students examine the major divisions and structures of plants and how to depict their unique form.

**COAR 326. Imagery for Science Fiction and Fantasy. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 300 and 320. This course focuses on assignments for science fiction/fantasy subject matter and its various commercial applications.

**COAR 327. Comics and Graphic Novels I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 201 and COAR 202. This course develops skills essential for visual storytelling through comics and graphic novels.

**COAR 328. Comics and Graphic Novels II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 327. This course further develops skills essential to expanding understanding of visual storytelling through comics and graphic novels.

**COAR 331. Photographic Principles in Visual Communications. 3 Hours.**  
Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 210. A studio course that explores the use of the camera, from pinhole photography to digital imaging, and includes the introduction of digital methods (e.g., Photoshop) as tools used in visual communications.

**COAR 332. Digital Drawing. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 200. An intermediate course exploring the use of computer and peripheral devices in the creation of raster (grid/pixel) and vector (mathematical)-based drawing. Students will be introduced to professional digital methods (e.g., Illustrator, Photoshop).

**COAR 333. Web Page Design. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 210, COAR 211 and permission of instructor. A course developing the design of websites. Emphasis is placed on the visual design, navigation, development, communication and authoring of websites.

**COAR 340. Anatomy for Medical Illustration. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 201. An advanced investigation of the human organ systems. In addition to assigned readings, students will execute a series of anatomical drawings.

**COAR 341. Scientific Illustration. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Corequisite: COAR 202. An introductory course in the development of accurate representational imagery for recording scientific observations and ideas.

**COAR 351. Origins of Visual Communications. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: successful completion of the Art Foundation Program. A history of visual communications and design from prehistoric times to the 20th century.

**COAR 352. History of Visual Communications I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103 and 104. An examination of the historical developments in visual communications from cave paintings to modernism.

**COAR 353. History of Visual Communications II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103 and 104. An examination of the historical developments in visual communications from modernism to the contemporary era.

**COAR 354. Theoretical and Philosophical Aspects of Contemporary Communication Arts and Design. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of current theoretical and philosophical issues having an impact on the understanding of communication arts and design.

**COAR 391. Communication Arts Topics. 1-3 Hours.**

Semester course; variable hours. 1-3 credits per semester. May be repeated for a maximum of 9 credits. Topical lectures in design issues and visual communications.

**COAR 392. Research/Individual Study. 1-6 Hours.**

Semester course; 1-2 lecture and 3-6 studio hours. 1-6 credits. May be repeated for a total of 6 credits. Enrollment requires permission of instructor, approval of faculty adviser and chair. The structuring, research, execution and presentation of an independent project in visual communications under the direction of a faculty adviser. The student will be encouraged to become a self-generating problem seeker and solver with the ability to carry out self-stated goals.

**COAR 401. Drawing Studies: The Figure (Advanced). 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for up to 12 credits. Prerequisite: COAR 301 or permission of instructor. Drawing from direct observation at an advanced level using the figure as the primary means to understand proportion, volume and spatial relationships. Various drawing and painting media will be explored.

**COAR 407. Senior Project. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 300 and 320 and senior status in communication arts. An advanced course in the conceptualization, execution, realization and documentation of a portfolio project. Students will be required to create and structure a major project that will develop and test their conceptual, contextual and technical abilities. Project work will be exhibited, documented or printed. Various drawing, painting and mixed media will be explored. Assignments will incorporate applicable references to the history of art and contemporary developments.

**COAR 412. Art Direction III. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 313. An advanced exploration of art direction based on positioning of the corporation that carries over several different channels of communication.

**COAR 413. Art Direction IV. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 313. An advanced course in art direction including the development of integrated business advertising plans.

**COAR 414. Advertising Concepts II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 314. An advanced course in art direction focusing on the successful integration of strategy and creativity.

**COAR 415. Art Direction for Nonprofit Organizations. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 313. Advanced concept, layout and design under the delimitations of precise environmental or social agendas and limited budgets.

**COAR 420. Graphic Essay. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: UNIV 200 or HONR 200 and COAR 320. An advanced course that explores the relationship between text and image, and their potential as tools to enable us to create and communicate effectively. Assignments will incorporate applicable references to the history of art and literature.

**COAR 421. Imagery for Children. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 300 and 320. An advanced course developing both fiction and nonfiction illustrations intended for the preschool and elementary school children's publishing market.

**COAR 422. Editorial Illustration II. 4 Hours.**

Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisites: COAR 300 and 320. An advanced course developing the student's skill at interpreting an author's manuscript. The major emphasis is given to illustrations appearing in books and magazines.

**COAR 423. Illustration for Business Communications. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: COAR 300 and 320. An advanced course developing illustrations appropriate for business communications.

**COAR 424. Experimental Illustration. 4 Hours.**

Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisites: COAR 300 and 320. An advanced course encouraging the student to discover unusual techniques and to develop innovative solutions. Stresses experimentation with novel media and surfaces.



**COAR 432. 3-D Image and Movement. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Course restricted to majors in the School of the Arts. Course addresses current technological tools to explore the relationship between image, object and movement.

**COAR 433. Game Design, Theory and Practice. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 432. Students will study the history, theory and design of games, gaming concepts and narrative from past to present.

**COAR 435. Organic 3-D Modeling for Concept Design. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 432. A focus on the use of high polygraph 3-D graphics software as tools to create highly detailed computer models for concept design, movies, broadcast media and games.

**COAR 441. Scientific Illustration II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: COAR 341. An advanced course in the development and creation of accurate documentation and representation of scientific information and imagery including plant taxonomy, insect morphology, and physiological and pathological processes.

**COAR 450. Business of Communication Arts. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. The study of business management with an emphasis on ethics and the standards of fair practice including financial and contractual guidelines.

**COAR 462. Projects in Illustration. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: senior standing in communications arts and permission of the instructor. An advanced-level course in conceptualization, execution, realization and documentation as realized through a series of projects in illustration. Students will be required to create, acquire and structure projects that will test their conceptual and technical abilities. Project work will be exhibited, documented or printed. Various drawing, painting and mixed media will be explored. Assignments will incorporate applicable references to the history of art and contemporary developments.

**COAR 463. Communication Arts Honors Studio. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for up to 12 credits. Prerequisites: junior standing in communication arts, 3.0 GPA and permission of the CA faculty. An advanced course for selected students. Expectations include to work on individual and group projects at a professional level.

**COAR 464. Senior Portfolio. 6 Hours.**

Semester course; 4 lecture and 6 studio hours. 6 credits. Prerequisite: COAR 450. An advanced course in the conceptualization, realization and documentation of a portfolio project. It is a capstone experience integrating professional development of the portfolio, promotional materials and resume preparation within the field of communication arts. Assignments will incorporate applicable references to the history of art and contemporary developments.

**COAR 491. Studio Topics in Communication Arts. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for credit. Topical studio focusing on research and experimentation in specialized visual communication media.

**COAR 492. Communication Arts Internship. 1-6 Hours.**

Semester course; 1-6 credits. May be repeated for a maximum of 12 credits. Prerequisites: senior standing, 3.0 GPA or permission of the chair. Supervised pragmatic work experiences. Training is provided under the direction and supervision of qualified professional practitioners.

**Craft and Material Studies (CRAF)****CRAF 201. Metalsmithing. 4 Hours.**

Continuous courses; 2 lecture and 6 studio hours. 4-4 credits. Prerequisite: successful completion of the Art Foundation Program; completion of CRAF 201 to enroll in CRAF 202. Investigation of metal forming processes such as forging, raising and construction. Research in contemporary and historical metal forms.

**CRAF 202. Metalsmithing. 4 Hours.**

Continuous courses; 2 lecture and 6 studio hours. 4-4 credits. Prerequisite: successful completion of the Art Foundation Program; completion of CRAF 201 to enroll in CRAF 202. Investigation of metal forming processes such as forging, raising and construction. Research in contemporary and historical metal forms.

**CRAF 211. Jewelry. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: successful completion of the Art Foundation Program. Investigation of basic jewelry making processes such as construction, chasing, surface embellishment and basic stone setting. Research in contemporary and historical jewelry forms.

**CRAF 221. Woodworking Techniques. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: successful completion of the Art Foundation Program. Introduction to techniques of woodworking. Includes the use of hand tools; hand and machine joinery; shaping and carving; finishing; and techniques involving jigs and fixtures. Students participate in studio work.

**CRAF 240. Introduction to Ceramics. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: successful completion of the Art Foundation Program. Introduction to beginning processes of wheel throwing and hand-built construction techniques, design, aesthetics and the creative development of clay objects examining cultural, historical and personal modes of expression. Demonstrations and slide presentations are given for assignments along with handouts to assist in illustrating techniques and processes. Students will be introduced to various ceramic aesthetics in contemporary, social and historical context.

**CRAF 241. Ceramics: Handbuilding. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: successful completion of the Art Foundation Program. Basic construction techniques for fabricating ceramic objects. Includes mold-making, slip casting and press-molding as well as the use and application of low-fire slips, underglazes, glazes and the firing of these objects in kilns.

**CRAF 242. Ceramics: Wheelthrowing. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: successful completion of the Art Foundation Program. Introduction to the use of the potter's wheel. The objective is to develop the skill, dexterity and coordination required to use the wheel as one tool of the ceramic forming process. Includes the properties and uses of high-fire clays and glazes. Students participate in kiln firings.

**CRAF 250. Introduction to Glass Fabrication. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: successful completion of the Art Foundation Program. An introduction and investigation into the physical and associative material properties of glass. Students will explore a variety of methodologies for hot, cold and casting glass fabrication. The history and modern application of each technique will be covered through lectures, demonstrations and studio work.



**CRAF 251. Introduction to Glassworking. 4 Hours.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. Prerequisite: successful completion of the Art Foundation Program. An investigation of techniques, tools, equipment and materials involved in hot and cold glassworking processes. First semester covers basic molten-glass furnace techniques such as blowing and casting, mold-making and Pate de Verre (fusing crushed glass in a mold). Second semester explores colored glass fusing, use of enamels and glazes, mold-making for slumped forms and stained glass.

**CRAF 252. Introduction to Glassworking. 4 Hours.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. Prerequisite: successful completion of the Art Foundation Program. An investigation of techniques, tools, equipment and materials involved in hot and cold glassworking processes. First semester covers basic molten-glass furnace techniques such as blowing and casting, mold-making and Pate de Verre (fusing crushed glass in a mold). Second semester explores colored glass fusing, use of enamels and glazes, mold-making for slumped forms and stained glass.

**CRAF 253. Introduction to Glassworking: Lampworking. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: successful completion of the Art Foundation Program. An investigation of techniques, tools, equipment and materials involved in glass lampworking processes. The course covers basic melting, shaping and blowing with a glass torch working process.

**CRAF 260. Introduction to Textiles. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: successful completion of the Art Foundation Program. An introduction to basic textile techniques, tools and materials. This course introduces dyeing, weaving, felt-making, embroidery, sewing and related techniques. The history and modern application of each technique will be covered through lectures, demonstrations and studio work.

**CRAF 261. Beginning Textiles. 4 Hours.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. Prerequisite: successful completion of the Art Foundation Program. An introduction to basic textile techniques, tools and materials. CRAF 261 introduces tapestry, feltmaking, basketry and related techniques. CRAF 262 focuses on embroidery, silk painting, piecing and quilting, and related techniques. The history and modern application of each technique will be examined through lectures, demonstrations and studio work.

**CRAF 262. Beginning Textiles. 4 Hours.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. Prerequisite: successful completion of the Art Foundation Program. An introduction to basic textile techniques, tools and materials. CRAF 261 introduces tapestry, feltmaking, basketry and related techniques. CRAF 262 focuses on embroidery, silk painting, piecing and quilting, and related techniques. The history and modern application of each technique will be examined through lectures, demonstrations and studio work.

**CRAF 282. Sophomore Seminar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: successful completion of the Art Foundation Program. Introduction to the fields within the Department of Craft and Material Studies, critique practices, planning for arts career and writing within the field.

**CRAF 301. Advanced Metal Fabrication: Forming. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 211 with a minimum grade of C. This course introduces students to various metal forming techniques. While cultivating respect for craft, the underlying theme of the course explores form as a means of expression for both functional and nonfunctional work. It is designed to develop skill, craftsmanship and sensitivity to design in working with metal. The history and modern application of each technique will be covered through lectures, demonstrations and studio work.

**CRAF 302. Advanced Metal Fabrication: Mechanisms. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 211 with a minimum grade of C. This course introduces students to various fabrication techniques, findings and mechanisms related to the production of jewelry and small-scale objects. It is designed to develop skill, craftsmanship and sensitivity to design in working with metal. The history and modern application of each technique will be covered through lectures, demonstrations and studio work.

**CRAF 303. Advanced Metal Fabrication: Surface Techniques. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 211 with a minimum grade of C. This course introduces students to various surface treatments employed in the production of jewelry and metal objects. It is designed to develop skill, craftsmanship and sensitivity to design in working with metal. While cultivating respect for craft, the underlying theme of the course explores form as a means of expression for both functional and nonfunctional work. The history and modern application of each technique will be covered through lectures, demonstrations and studio work.

**CRAF 304. Advanced Metal Fabrication: Casting and Stone Setting. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 211 with a minimum grade of C. This course introduces students to casting and stone setting techniques employed in the production of jewelry and metal objects. It is designed to develop skill, craftsmanship and sensitivity to design in working with metal. While cultivating respect for craft, the underlying theme of the course explores form as a means of expression for both functional and nonfunctional work. The history and modern application of each technique will be covered through lectures, demonstrations and studio work.

**CRAF 320. Furniture Design. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 8 credits. Prerequisite: CRAF 221 with a minimum grade of C. The course explores the development of ideas through drawings, mock-ups and the planning and execution of a small furniture object utilizing basic and specialized woodworking techniques.

**CRAF 321. Advanced Woodworking and Furniture Design. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 320 with a minimum grade of C. Advanced design and construction investigation of varied materials and machine processes.

**CRAF 322. Advanced Woodworking and Furniture Design. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 320 with a minimum grade of C. Advanced design and construction investigation of varied materials and machine processes.

**CRAF 341. Advanced Ceramics. 4,6 Hours.**

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Each of the courses may be repeated for up to a maximum of 12 credits. Prerequisite: CRAF 240 with a minimum grade of C. Advanced problems in the design and production of functional and nonfunctional ceramic products.

**CRAF 342. Advanced Ceramics. 4,6 Hours.**

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Each of the courses may be repeated for up to a maximum of 12 credits. Prerequisite: CRAF 240 with a minimum grade of C. Advanced problems in the design and production of functional and nonfunctional ceramic products.

**CRAF 343. The Figure in Clay. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: CRAF 240 with a minimum grade of C. This course is a continuation of study in ceramics with a focus on the figure in clay. While cultivating respect for craft, the underlying theme of the course explores the figure in clay as a means of expression in an art-making medium. The history and modern application of each hand-building technique will be covered through lectures, demonstrations and studio work.

**CRAF 344. Ceramics: Mold-Making. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: CRAF 240 with a minimum grade of C. This course is a continuation of study in ceramics with a focus on prototyping and mold-making techniques. While focused on generating original artwork, the course will cover prototype development and serialized production using a variety of mold-forming processes. The history and contemporary application of ceramic mold-making techniques will be covered through student research, demonstrations and studio work.

**CRAF 351. Intermediate Glass Fabrication/Hot. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 250 with a minimum grade of C. A deeper and broader delving into hot and cold glass fabrication techniques, with an introduction to the utilization and application of color processes will be explored.

**CRAF 352. Intermediate Glass Fabrication/Kiln Forming. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 250 with a minimum grade of C. A deeper exploration of warm glass (kiln forming) processes that will involve advanced mold-making techniques.

**CRAF 353. Glassworking: Lampworking. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for up to a maximum of 12 credits. Prerequisite: CRAF 251, 252 or 253, with a minimum grade of C. Provides an opportunity for further investigation, specialization and technical mastery in glass lampworking design.

**CRAF 354. Intermediate Glass Fabrication. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 351 or 352 with a minimum grade of C. A deeper and broader delving into hot and cold glass fabrication techniques, with an introduction to the utilization and application a multigenerational approach to image realization will be extensively investigated.

**CRAF 361. Intermediate Textiles: Tapestry/Weaving. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 260 with a minimum grade of C. An introduction to the floor loom with an emphasis on tapestry weaving. Concentrated studio work in contemporary and traditional loom techniques along with continuing individual investigation of other textile techniques.

**CRAF 362. Intermediate Textiles: Pattern Weaving. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 260 with a minimum grade of C. An introduction to the floor loom with an emphasis on pattern weaving. Concentrated studio work in contemporary and traditional loom techniques along with continuing individual investigation of other textile techniques.

**CRAF 363. Fabric Design I. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 260 with a minimum grade of C. Exploration of dye and pigment techniques for fabric along with pattern development and conceptual use of fabric.

**CRAF 364. Fabric Design II. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: CRAF 260 with a minimum grade of C. Exploration of dye and pigment techniques for fabric along with pattern development and conceptual use of fabric.

**CRAF 367. Tapestry. 4 Hours.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. Prerequisite: permission of instructor. Origins of tapestry forms and execution of techniques.

**CRAF 368. Tapestry. 4 Hours.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. Prerequisite: permission of instructor. Origins of tapestry forms and execution of techniques.

**CRAF 369. Ancient Peruvian Textile Techniques. 4 Hours.**

Semester course; 2 lecture and 6 or 12 studio hours. 4 credits. Prerequisite: permission of instructor. An examination of textile techniques perfected in ancient Peru and their application to contemporary fiber work. Pre-Columbian cultures will be studied to understand textile development. Course includes student duplication of techniques to better understand "structure" and the production of a personal object(s) utilizing these techniques and information.

**CRAF 382. Junior Seminar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRAF 282 and UNIV 200 or HONR 200. Continued investigation of the craft field, critique practices, planning for careers through the lens of creativity and exploration, and a continuation of writing in the field.

**CRAF 401. Advanced Metalsmithing or Jewelry. 4,6 Hours.**

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Each of the courses may be repeated up to a maximum of 12 credits. Prerequisite: CRAF 211 with a minimum grade of C. These courses offer opportunity for specialization and development of techniques.

**CRAF 402. Advanced Metalsmithing or Jewelry. 4,6 Hours.**

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Each of the courses may be repeated up to a maximum of 12 credits. Prerequisite: CRAF 211 with a minimum grade of C. These courses offer opportunity for specialization and development of techniques.

**CRAF 409. Summer Metal and Jewelry Workshop. 3 Hours.**

Semester course; 3, 6 or 9 studio hours. 1, 2 or 3 credits. May be repeated for credit. Prerequisite: permission of instructor. Exploration of specific metal processes and techniques such as fabrication, forging, forming, casting, enameling and electroforming. See the Schedule of Classes for specific topics to be offered each semester.

**CRAF 421. Advanced Woodworking and Furniture Design. 4,6 Hours.**

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Each of the courses may be repeated for up to a maximum of 12 credits. Prerequisite: CRAF 320 with a minimum grade of C. Advanced design and construction investigation of varied materials and machine processes.

**CRAF 422. Advanced Woodworking and Furniture Design. 4,6 Hours.**

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Each of the courses may be repeated for up to a maximum of 12 credits. Prerequisite: CRAF 320 with a minimum grade of C. Advanced design and construction investigation of varied materials and machine processes.

**CRAF 429. Summer Woodworking Workshop. 1-3 Hours.**

Semester course; 3, 6 or 9 studio hours. 1, 2 or 3 credits. May be repeated for credit. Prerequisite: permission of instructor. Exploration of specific woodworking processes and techniques such as joinery methods, laminate bending, steambending, etc. See the Schedule of Classes for specific topics to be offered each semester.

**CRAF 441. Advanced Ceramics. 4,6 Hours.**

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Each of the courses may be repeated for up to a maximum of 12 credits. Prerequisite: CRAF 240 with a minimum grade of C. Advanced problems in the design and production of functional and nonfunctional ceramic products.

**CRAF 442. Advanced Ceramics. 4,6 Hours.**

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Each of the courses may be repeated for up to a maximum of 12 credits. Prerequisite: CRAF 240 with a minimum grade of C. Advanced problems in the design and production of functional and nonfunctional ceramic products.

**CRAF 446. Glaze Technology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Development, formulation and application of ceramic glazes. The technology includes high, medium and low firing ranges as well as color and analysis of glaze materials.

**CRAF 447. Ceramic Technology: Clay, Claybodies and Slips. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Study of clay from geological origins to practical application. Course includes development and application of clay bodies in different firing ranges, englobes and slips.

**CRAF 448. Ceramic Workshop. 3 Hours.**

Semester courses; 9 studio hours. 3, 3 credits. Prerequisite: permission of instructor. Exploration in specific ceramic techniques such as raku, salt glaze, primitive firing and low temperature glazing.

**CRAF 449. Ceramic Workshop. 3 Hours.**

Semester courses; 9 studio hours. 3, 3 credits. Prerequisite: permission of instructor. Exploration in specific ceramic techniques such as raku, salt glaze, primitive firing and low temperature glazing.

**CRAF 451. Glassworking. 4,6 Hours.**

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Each of the courses may be repeated for up to a maximum of 12 credits. Prerequisite: CRAF 251 or 252, with a minimum grade of C. Opportunity for further investigation and specialization in glassworking design and technical mastery.

**CRAF 452. Glassworking. 4,6 Hours.**

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Each of the courses may be repeated for up to a maximum of 12 credits. Prerequisite: CRAF 251 or 252, with a minimum grade of C. Opportunity for further investigation and specialization in glassworking design and technical mastery.

**CRAF 455. Glass Through Time. 3 Hours.**

Semester course; 2 lecture and 1 studio hours. 3 credits. Prerequisite: permission of instructor. This class will be an in-depth examination of the application and utilization of the material glass throughout time. An inquiry into present and future artistic and architectural applications of the material will be explored.

**CRAF 456. Survey of Glass. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: permission of instructor. An examination of significant technological developments in glass from the past to present. First semester: ancient to 16th century. Second semester: 17th century to contemporary. Illustrated lectures.

**CRAF 459. Summer Glassworking Workshop. 3 Hours.**

Semester course; 3, 6 or 9 studio hours. 1, 2 or 3 credits. May be repeated for credit. Prerequisite: permission of instructor. Exploration of specific glassworking processes, such as forming molten glass, casting and coldworking techniques. See the Schedule of Classes for specific topics to be offered each semester.

**CRAF 461. Advanced Textile Studio. 4,6 Hours.**

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits for each course. Each course may be repeated for a maximum of 12 credits. Prerequisite: CRAF 362 with a minimum grade of C. Emphasis on investigation of advanced technical skills along with development of a personal style.

**CRAF 462. Advanced Textile Studio. 4,6 Hours.**

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits for each course. Each course may be repeated for a maximum of 12 credits. Prerequisite: CRAF 362 with a minimum grade of C. Emphasis on investigation of advanced technical skills along with development of a personal style.

**CRAF 463. Advanced Fabric Design. 4 Hours.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. Prerequisite: CRAF 364 with a minimum grade of C. Development of a personal direction with advance examination of dye applications.

**CRAF 464. Advanced Fabric Design. 4 Hours.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. Prerequisite: CRAF 364 with a minimum grade of C. Development of a personal direction with advance examination of dye applications.

**CRAF 480. Senior Studio/Critique Course. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 8 credits. Prerequisites: completed 12 credits from CRAF 301-364 with a minimum grade of C. Corequisite: enrollment in 4 credits from CRAF 301, 302, 303, 304, 320, 321, 322, 341, 342, 351, 354, 361, 362, 363 or 364. Focuses on the development of independent interests aimed at creating a cohesive series/body of work.

**CRAF 481. Senior Studio/Critique Course. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: CRAF 480 with a minimum grade of C. The course will focus on the continuation of creating a cohesive series/body of work begun during CRAF 480.

**CRAF 482. Senior Seminar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: senior standing in the major and CRAF 382. Capstone course focusing on the continued investigation of the craft field with emphasis on the student's media area(s) of focus and professional practices.

**CRAF 491. Topics in Craft/Material Studies. 1-3 Hours.**

Semester course; 1-3 credits. May be repeated for a maximum of 9 credits. Prerequisite: permission of instructor. A seminar or workshop on a selected issue or topic in the field of crafts. See the Schedule of Classes for specific topics to be offered each semester.

**CRAF 492. Independent Study. 1-3 Hours.**

Semester course; 1-3 credits. May be repeated for a maximum of 6 credits. Prerequisites: senior standing in the major and permission of the instructor. The student will pursue advanced, individually directed study on a subject to be formulated in writing by the student and instructor.

**CRAF 493. Fieldwork. 3 Hours.**

Semester courses; 135 clock hours. 3 credits. Prerequisites: senior standing in the major and permission of department chair. Opportunity for practical work experiences. Senior students are placed with professionals who offer supervised work or research experience appropriate to their major interests. Participation requires the approval of both the department chair and field supervisor. Students must work 135 clock hours and maintain a daily log of their experiences. Field supervisor will plan student's work and evaluate performance.

**CRAF 494. Fieldwork. 6 Hours.**

Semester course; 270 clock hours. 6 credits. Prerequisites: senior standing in the major and permission of department chair. Opportunity for practical work experiences. Senior students are placed with professionals who offer supervised work or research experience appropriate to their major interests. Participation requires the approval of both the department chair and field supervisor. Students must work 270 clock hours and maintain a daily log of their experiences. Field supervisor will plan student's work and evaluate performance.

**Dance and Choreography (DANC)****DANC 101. Modern Dance Technique I and Workshop. 3 Hours.**

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits. These courses may be repeated for a maximum total of 12 credits on the recommendation of the chair. Prerequisites: completion of DANC 101 to enroll in DANC 102. Dance major or departmental approval. Fundamental study and training in principles of modern dance technique. Emphasis is on body alignment, spatial patterning, flexibility, strength and kinesthetic awareness. Course includes weekly group exploration of techniques related to all areas of dance.

**DANC 102. Modern Dance Technique I and Workshop. 3 Hours.**

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits. These courses may be repeated for a maximum total of 12 credits on the recommendation of the chair. Prerequisites: completion of DANC 101 to enroll in DANC 102. Dance major or departmental approval. Fundamental study and training in principles of modern dance technique. Emphasis is on body alignment, spatial patterning, flexibility, strength and kinesthetic awareness. Course includes weekly group exploration of techniques related to all areas of dance.

**DANC 103. Survey of Dance History. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisites: completion of DANC 103 to enroll in DANC 104. Dance major or departmental approval. First semester: dance from ritual to the contemporary ballet and the foundations of the Western aesthetic as it relates to dance, and the development of the ballet. Second semester: Western concert dance from the aesthetic dance of the late 1800s to contemporary modern dance. These courses are the first two of a three-course sequence that fulfills one of the general education writing intensive requirements for dance majors.

**DANC 104. Survey of Dance History. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisites: completion of DANC 103 to enroll in DANC 104. Dance major or departmental approval. First semester: dance from ritual to the contemporary ballet and the foundations of the Western aesthetic as it relates to dance, and the development of the ballet. Second semester: Western concert dance from the aesthetic dance of the late 1800s to contemporary modern dance. These courses are the first two of a three-course sequence that fulfills one of the general education writing intensive requirements for dance majors.

**DANC 105. Improvisation. 2 Hours.**

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. Prerequisite: completion of DANC 105 to enroll in DANC 106. An exploration of spontaneous body movement with the purpose of increasing body awareness, movement invention and movement creativity.

**DANC 106. Improvisation. 2 Hours.**

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. Prerequisite: completion of DANC 105 to enroll in DANC 106. An exploration of spontaneous body movement with the purpose of increasing body awareness, movement invention and movement creativity.

**DANC 107. Music and Dance Forms. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisites: DANC 101 and 105, or permission of instructor. An exploration of the various traditional and nontraditional concepts of music that are used in collaboration with dance. Course includes lecture, reading, listening and movement assignments. Focus will be on the dancer's understanding and use of music through movement analysis and improvisation.

**DANC 111. Ballet Technique I. 2 Hours.**

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. Prerequisites: completion of DANC 111 to enroll in DANC 112. Corequisites: DANZ 111-112. Dance major or departmental approval. These courses may be repeated for a maximum total of 8 credits on the recommendation of the chair. Fundamental study of the principles of ballet technique.

**DANC 112. Ballet Technique I. 2 Hours.**

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. Prerequisites: completion of DANC 111 to enroll in DANC 112. Corequisites: DANZ 111-112. Dance major or departmental approval. These courses may be repeated for a maximum total of 8 credits on the recommendation of the chair. Fundamental study of the principles of ballet technique.

**DANC 121. Tap Technique I. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Beginning study and training in the principles of tap technique with emphasis upon style, body alignment, spatial patterning, flexibility, strength and kinesthetic awareness to move the body in the style required for tap dancing. Crosslisted as: AFAM 121.



**DANC 122. Tap Technique I. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Beginning study and training in the principles of tap technique with emphasis upon style, body alignment, spatial patterning, flexibility, strength and kinesthetic awareness to move the body in the style required for tap dancing. Crosslisted as: AFAM 122.

**DANC 126. African-Caribbean Dance I. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Dance based on the movements and rhythms of Africa and the Caribbean. Crosslisted as: AFAM 126.

**DANC 127. African-Caribbean Dance I. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Dance based on the movements and rhythms of Africa and the Caribbean. Crosslisted as: AFAM 127.

**DANC 133. Introduction to Ballet Technique I. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. This course may be repeated for a maximum total of 4 credits on the recommendation of the chair. For nonmajors. Introductory study of the principles of ballet technique.

**DANC 134. Introduction to Ballet Technique II. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DANC 133 or permission of instructor. For nonmajors. This course may be repeated for a maximum total of 4 credits on the recommendation of the chair. Further introductory study of the principles of ballet technique.

**DANC 141. Ballroom Dancing. 1 Hour.**

Semester courses; 2 studio hours. 1, 1 credit. A study of basic ballroom dance steps and practice in their performance.

**DANC 142. Ballroom Dancing. 1 Hour.**

Semester courses; 2 studio hours. 1, 1 credit. A study of basic ballroom dance steps and practice in their performance.

**DANC 151. Jazz Dance Technique I. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DANC 102 or permission of instructor. Study and training in the principles and concepts of jazz technique. Emphasis on body alignment, flexibility, balance, rhythmic awareness and mastery of isolated movements of body parts. The course includes the exploration of the relationship between jazz music and jazz dance. Crosslisted as: AFAM 151.

**DANC 152. Jazz Dance Technique I. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DANC 102 or permission of instructor. Study and training in the principles and concepts of jazz technique. Emphasis on body alignment, flexibility, balance, rhythmic awareness and mastery of isolated movements of body parts. The course includes the exploration of the relationship between jazz music and jazz dance. Crosslisted as: AFAM 152.

**DANC 161. Rehearsal and Performance. 1-3 Hours.**

Semester course; hours to be arranged. 1-3 credits. Prerequisite: audition. May be repeated for a maximum of 4 credits. Dance rehearsals and production of work for a dance concert.

**DANC 162. Rehearsal and Performance. 1-3 Hours.**

Semester course; hours to be arranged. 1-3 credits. Prerequisite: audition. May be repeated for a maximum of 4 credits. Dance rehearsals and production of work for a dance concert.

**DANC 171. T'ai Chi. 2 Hours.**

Semester courses; 1 lecture and 2 studio hours. 2 credits. Study and practice of T'ai Chi, a Chinese exercise form, which is designed to bring one to full potential through balancing, aligning and breathing exercises. The short Yang form, based on Taoist principles, strengthens the body while allowing for deep relaxation to take place. Application of T'ai Chi to creative dance techniques is explored as a springboard for improvisation.

**DANC 172. T'ai Chi. 2 Hours.**

Semester courses; 1 lecture and 2 studio hours. 2 credits. Study and practice of T'ai Chi, a Chinese exercise form, which is designed to bring one to full potential through balancing, aligning and breathing exercises. The short Yang form, based on Taoist principles, strengthens the body while allowing for deep relaxation to take place. Application of T'ai Chi to creative dance techniques is explored as a springboard for improvisation.

**DANC 183. Introduction to Modern Dance Technique. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. May be repeated for a maximum of 4 credits. For non-dance majors. Experiential introduction to basic movement principles, body alignment and the elements of modern dance.

**DANC 184. Introduction to Modern Dance Technique. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DANC 183 or by audition on first day of class. May be repeated for a maximum of 4 credits. For non-dance majors. Experiential introduction to basic movement principles, body alignment and the elements of modern dance.

**DANC 191. West African Dance Techniques. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. May be repeated for up to 4 credits. This course is designed to provide the student with movement skill(s) and knowledge of traditional dances of West Africa, with an emphasis on the acquisition of basic movement sequences, as well as traditional dance techniques aligned with the songs, instruments, rhythms and foundational understanding of the cultural and historical context in which the dance derived. This course is open to students of all skill levels, from beginner to the more advanced.

**DANC 201. Modern Dance Technique II and Workshop. 3 Hours.**

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits. These courses may be repeated for a maximum of 12 credits on the recommendation of the chair. Prerequisites: dance major and DANC 102, or departmental approval; completion of DANC 201 to enroll in DANC 202. Further study and training in the principles of modern dance technique on an intermediate level with the expectation of better coordination of all elements into a sense of dance. Course includes weekly group exploration of techniques related to all areas of dance.

**DANC 202. Modern Dance Technique II and Workshop. 3 Hours.**

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits. These courses may be repeated for a maximum of 12 credits on the recommendation of the chair. Prerequisites: dance major and DANC 102, or departmental approval; completion of DANC 201 to enroll in DANC 202. Further study and training in the principles of modern dance technique on an intermediate level with the expectation of better coordination of all elements into a sense of dance. Course includes weekly group exploration of techniques related to all areas of dance.

**DANC 205. Composition. 3 Hours.**

Continuous courses; 2 lecture and 2 studio hours. 3-3 credits. Prerequisites: dance major and DANC 105 and 107, or departmental approval; completion of DANC 205 to enroll in DANC 206. An introduction to the basic elements of choreography.



**DANC 206. Composition. 3 Hours.**

Continuous courses; 2 lecture and 2 studio hours. 3-3 credits.  
Prerequisites: dance major and DANC 105 and 107, or departmental approval; completion of DANC 205 to enroll in DANC 206. An introduction to the basic elements of choreography.

**DANC 207. Studies in Music for Dance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: dance major and DANC 107, or departmental approval. Study of the history, theory and aesthetics of music as it relates to dance. Course includes lecture, listening, reading, discussion, writing and oral presentations.

**DANC 209. DANCE WORKSHOP. 1 Hour.****DANC 210. DANCE WORKSHOP. 1 Hour.****DANC 211. Ballet Technique II. 2 Hours.**

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. This course may be repeated for a maximum total of 8 credits on the recommendation of the chair. Prerequisites: dance major and DANC 112, or departmental approval; completion of DANC 211 to enroll in DANC 212. Intermediate-level study, training and practice of ballet technique.

**DANC 212. Ballet Technique II. 2 Hours.**

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. This course may be repeated for a maximum total of 8 credits on the recommendation of the chair. Prerequisites: dance major and DANC 112, or departmental approval; completion of DANC 211 to enroll in DANC 212. Intermediate-level study, training and practice of ballet technique.

**DANC 213. Beginning/Intermediate Pointe. 1 Hour.**

Semester course; 2 studio hours. 1 credit. Course restricted to dance majors. Study and practice of pointe technique, including barre and center floor work using proper body alignment and safe movement mechanics.

**DANC 221. Tap Technique II. 2 Hours.**

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Prerequisite: Audition or permission of instructor. Further study and training in the principles of tap technique.

**DANC 222. Tap Technique II. 2 Hours.**

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Prerequisite: Audition or permission of instructor. Further study and training in the principles of tap technique.

**DANC 251. Jazz Technique II. 2 Hours.**

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits.  
Prerequisites: DANC 151, 152, or permission of instructor. An in-depth study of movement styles and qualities in jazz dance. Advanced work on integrating music and movement with focus upon chronology of jazz music and corresponding dance forms.

**DANC 252. Jazz Technique II. 2 Hours.**

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits.  
Prerequisites: DANC 151, 152, or permission of instructor. An in-depth study of movement styles and qualities in jazz dance. Advanced work on integrating music and movement with focus upon chronology of jazz music and corresponding dance forms.

**DANC 253. Pilates. 1-2 Hours.**

Semester course; 2-4 laboratory hours. 1-2 credits. Students engage in a physical practice: matwork of the Pilates system, built on the work of Joseph H. Pilates. The practice is designed to improve muscular-skeletal performance, strength, flexibility and endurance, while focusing on core stability, restoring the optimal curves of the spine, relieving tension and enhancing self-confidence. Basic muscular anatomy and kinesiology will also be integrated into instruction and cuing for greater body awareness.

**DANC 254. Yoga. 1-3 Hours.**

Semester course; 2-6 laboratory hours. 1-3 credits. Students engage in a physical practice based on yoga, taught from an experiential, philosophical and anatomic perspective, with an emphasis on dynamic flow that links breath and movement.

**DANC 255. Hip Hop Dance. 2 Hours.**

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Prerequisite: dance major or permission of instructor. Intermediate-level dance technique class that draws on the hip hop aesthetic to create a movement experience that emphasizes individual style, rhythmic awareness and physical prowess.

**DANC 256. Hip Hop Dance. 2 Hours.**

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Prerequisite: dance major or permission of instructor. Intermediate-level dance technique class that draws on the hip hop aesthetic to create a movement experience that emphasizes individual style, rhythmic awareness and physical prowess.

**DANC 260. Dance Production Workshop. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: dance major or permission of instructor. An introduction to the basic principles of dance lighting and technical theatre through lecture, practical demonstration and discussion.

**DANC 261. Rehearsal and Performance. 1-3 Hours.**

Semester course; hours to be arranged. 1-3 credits. Prerequisite: audition. May be repeated for a maximum of 4 credits. Dance rehearsals and production of work for a major dance concert.

**DANC 262. Rehearsal and Performance. 1-3 Hours.**

Semester course; hours to be arranged. 1-3 credits. Prerequisite: audition. May be repeated for a maximum of 4 credits. Dance rehearsals and production of work for a major dance concert.

**DANC 291. Topics in Dance. 1-4 Hours.**

Semester course; 1-4 credits. May be repeated for a maximum of 8 credits. Prerequisite: permission of instructor. A seminar or workshop on a selected issue or topic in the field of dance. See the Schedule of Classes for specific topics to be offered each semester.

**DANC 293. Professional Performance: Trainee Level First Year. 7 Hours.**

Continuous course; 7 credits per semester. Prerequisite: official trainee status with an approved professional dance company and permission of the chair. Training, rehearsal and performance as a trainee with a professional dance company approved by VCU Dance.

**DANC 294. Professional Performance: Trainee Level First Year. 7 Hours.**

Continuous course; 7 credits per semester. Prerequisite: official trainee status with an approved professional dance company and permission of the chair. Training, rehearsal and performance as a trainee with a professional dance company approved by VCU Dance.

**DANC 301. Modern Dance Technique III and Workshop. 3 Hours.**

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits. These courses may be repeated for a maximum of 12 credits on the recommendation of the chair. Prerequisites: dance major and DANC 202, or departmental approval; completion of DANC 301 to enroll in DANC 302. Advanced study and training in principles of modern dance technique. Movement studies demanding greater strength and flexibility. Spatial patterns demanding increased coordination, kinesthetic awareness and aesthetic sensitivity. Course includes weekly group exploration of techniques related to all areas of dance.

**DANC 302. Modern Dance Technique III and Workshop. 3 Hours.**

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits.

These courses may be repeated for a maximum of 12 credits on the recommendation of the chair. Prerequisites: dance major and DANC 202, or departmental approval; completion of DANC 301 to enroll in DANC 302. Advanced study and training in principles of modern dance technique. Movement studies demanding greater strength and flexibility. Spatial patterns demanding increased coordination, kinesthetic awareness and aesthetic sensitivity. Course includes weekly group exploration of techniques related to all areas of dance.

**DANC 303. Choreography/Performance. 3 Hours.**

Continuous courses; 2 lecture and 2 studio hours. 3-3 credits.

Prerequisites: dance major, DANC 205-206 and 207, and successful completion of the sophomore readmittance evaluation; completion of DANC 303 to enroll in DANC 304. The craft of choreography and performing techniques are explored extensively as students develop solo and group pieces while rotating in the roles of choreographer/director and performer.

**DANC 304. Choreography/Performance. 3 Hours.**

Continuous courses; 2 lecture and 2 studio hours. 3-3 credits.

Prerequisites: dance major, DANC 205-206 and 207, and successful completion of the sophomore readmittance evaluation; completion of DANC 303 to enroll in DANC 304. The craft of choreography and performing techniques are explored extensively as students develop solo and group pieces while rotating in the roles of choreographer/director and performer.

**DANC 307. Music and Dance Forms for Trainees. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisites: DANC 105 and 394, or permission of instructor. An exploration of the various traditional and nontraditional concepts of music that are used in collaboration with dance. Course includes lecture, reading, listening and viewing of choreography with writing and movement assignments.

**DANC 311. Ballet Technique III. 2 Hours.**

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. This course may be repeated for a maximum of 12 credits on the recommendation of the chair. Prerequisites: dance major and DANC 212, or departmental approval; completion of DANC 311 to enroll in DANC 312. Advanced training, study and practice of ballet technique focusing on the refinement and performance skills.

**DANC 312. Ballet Technique III. 2 Hours.**

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. This course may be repeated for a maximum of 12 credits on the recommendation of the chair. Prerequisites: dance major and DANC 212, or departmental approval; completion of DANC 311 to enroll in DANC 312. Advanced training, study and practice of ballet technique focusing on the refinement and performance skills.

**DANC 313. Dance in World Cultures. 3 Hours.**

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: DANC 103-104 and UNIV 200 or HONR 200, or permission of instructor. This course is the third in a sequence that fulfills one of the general education writing intensive requirements for dance majors. Students learn and participate in dance styles of various world cultures as they study cultural traditions and how they are expressed in movement. No dance experience necessary. This course will include lectures, readings, research and discussion. Students will engage in the viewing and discussion of films, videos and dance concerts.

**DANC 315. Contact Improvisation. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. May be repeated for a maximum total of 6 credits. Exploration of the technique of partnering and the exchange of weight in an improvisational format. Emphasis is on a shared process that explores gravity, lifting, and the give and take of body weight.

**DANC 316. Contact Improvisation. 2 Hours.**

Semester courses; 1 lecture and 2 studio hours. 2 credits. Prerequisites: DANC 101, 102, or permission of instructor. Exploration of the technique of partnering and the exchange of weight in an improvisational format. Emphasis is on a shared process that explores gravity, lifting, and the give and take of body weight.

**DANC 317. Anatomy for the Dancer. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Prerequisite: dance major and UNIV 200 or HONR 200. A Web-based, self-study course designed for dance students. Integrates the study of anatomy with dance terminology, skills and concepts. Covers basic knowledge of skeletal, muscular and nervous systems of the body and applies this information to principles important to dance.

**DANC 318. Dance Science. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits.

Prerequisites: dance major and DANC 317. A team-taught lecture and laboratory course that applies anatomical and basic kinesiological concepts to dance technique. Students will analyze and assess dance movement using scientific principles as well as study the interplay between the aesthetic qualities and biomechanics of dance technique, and the role of this study in injury prevention.

**DANC 319. Video/Choreography Workshop. 3 Hours.**

Semester courses; 2 lecture and 2 studio hours. 3, 3 credits.

Prerequisites: experience in movement, performance and/or video/film, or permission of instructor. Students gain practical skills as well as basic theoretical foundation in the principles of working with video and choreography.

**DANC 320. Video/Choreography Workshop. 3 Hours.**

Semester courses; 2 lecture and 2 studio hours. 3, 3 credits.

Prerequisites: experience in movement, performance and/or video/film, or permission of instructor. Students gain practical skills as well as basic theoretical foundation in the principles of working with video and choreography.

**DANC 321. Partnering. 2 Hours.**

Semester course; 1 lecture and 2 studio hours. 2 credits. May be repeated for a maximum total of 4 credits. Enrollment restricted to dance majors. Investigation and practice of traditional to contemporary partnering concepts supporting the fundamental through advanced development of skills necessary for a dancer and choreographer.

**DANC 360. Lighting Design for Dance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: DANC 260 or permission of instructor. Open to qualified School of the Arts majors only. A study in the art of lighting design as it evolves from the choreographer/designer collaboration. The basic techniques of drafting, use of color and composition of space related to light and movement.

**DANC 361. Rehearsal and Performance. 1-3 Hours.**

Semester course; hours to be arranged. 1-3 credits. Prerequisite: audition. May be repeated for a maximum of 9 credits. Dance rehearsals and production of work for a major dance concert.

**DANC 362. Rehearsal and Performance. 1-3 Hours.**

Semester course; hours to be arranged. 1-3 credits. Prerequisite: audition. May be repeated for a maximum of 9 credits. Dance rehearsals and production of work for a major dance concert.

**DANC 371. Repertory. 3 Hours.**

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: audition. May be repeated for a maximum of 9 credits. Study and rehearsal of roles in choreography produced by the faculty and/or guest artists, with the objective of achieving a performance level.

**DANC 372. Repertory. 3 Hours.**

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: audition. May be repeated for a maximum of 9 credits. Study and rehearsal of roles in choreography produced by the faculty and/or guest artists, with the objective of achieving a performance level.

**DANC 393. Professional Performance: Trainee Level Second Year. 8 Hours.**

Continuous course; 8 credits per semester. Prerequisite: official apprentice status with an approved professional dance company and permission of the chair. Training, rehearsal and performance as an apprentice with a professional dance company approved by VCU Dance.

**DANC 394. Professional Performance: Trainee Level Second Year. 8 Hours.**

Continuous course; 8 credits per semester. Prerequisite: official apprentice status with an approved professional dance company and permission of the chair. Training, rehearsal and performance as an apprentice with a professional dance company approved by VCU Dance.

**DANC 401. Modern Dance Technique IV and Workshop. 3 Hours.**

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits. These courses may be repeated for a maximum of 18 credits on the recommendation of the department chair. Prerequisites: dance major and DANC 302, or departmental approval; completion of DANC 401 to enroll in DANC 402. Preprofessional study and training in modern dance technique. Movement studies demanding a superior level of clarity, strength and flexibility. Movement patterns demanding a high level of coordination, deep kinesthetic awareness and aesthetic sensitivity. Exploration of a wide range of performance qualities. Course includes weekly group exploration of techniques related to all areas of dance.

**DANC 402. Modern Dance Technique IV and Workshop. 3 Hours.**

Continuous courses; 1 lecture and 6 studio hours. 3-3 credits. These courses may be repeated for a maximum of 18 credits on the recommendation of the department chair. Prerequisites: dance major and DANC 302, or departmental approval; completion of DANC 401 to enroll in DANC 402. Preprofessional study and training in modern dance technique. Movement studies demanding a superior level of clarity, strength and flexibility. Movement patterns demanding a high level of coordination, deep kinesthetic awareness and aesthetic sensitivity. Exploration of a wide range of performance qualities. Course includes weekly group exploration of techniques related to all areas of dance.

**DANC 405. Composition for Trainees. 3 Hours.**

Continuous courses; 2 lecture and 2 studio hours. 3-3 credits. Prerequisites: dance major and DANC 105 and 307, or departmental approval; completion of DANC 405 to enroll in DANC 406. Exploration and research of the elements of choreography.

**DANC 406. Composition for Trainees. 3 Hours.**

Continuous courses; 2 lecture and 2 studio hours. 3-3 credits. Prerequisites: dance major and DANC 105 and 307, or departmental approval; completion of DANC 405 to enroll in DANC 406. Exploration and research of the elements of choreography.

**DANC 407. Teaching Methods for Dance. 3 Hours.**

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: dance major and DANC 302. The student learns to analyze and communicate movement in a variety of teaching situations. The student will have an opportunity to observe different teaching techniques and to practically apply learned teaching concepts and theories.

**DANC 409. DANCE WORKSHOP. 1 Hour.****DANC 410. DANCE WORKSHOP. 1 Hour.****DANC 411. Ballet Technique IV. 2 Hours.**

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. May be repeated for a maximum total of 12 credits. Prerequisites: dance major and placement audition or permission of the chair; completion of DANC 411 to enroll in DANC 412. Preprofessional study and practice of ballet technique focusing on the refinement of technical skills and the elements of dynamic performance in ballet.

**DANC 412. Ballet Technique IV. 2 Hours.**

Continuous courses; 1 lecture and 2 studio hours. 2-2 credits. May be repeated for a maximum total of 12 credits. Prerequisites: dance major and placement audition or permission of the chair; completion of DANC 411 to enroll in DANC 412. Preprofessional study and practice of ballet technique focusing on the refinement of technical skills and the elements of dynamic performance in ballet.

**DANC 413. African American Presence in American Dance, Performance and Social Contexts. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: DANC 103-104 and UNIV 200 or HONR 200, or permission of instructor. This course is an option for the third course in a sequence that fulfills a writing intensive requirement for dance majors only. Examines African-American history, culture and aesthetics as they relate to dance in American social and performance contexts. Includes lectures, readings, research and video screenings.

**DANC 414. Summer Dance Workshop. 1-3 Hours.**

Semester courses; variable hours. 1 or 3 credits per semester. May be repeated for credit. Flexible course offerings in dance technique, improvisation, composition, rhythmic training and repertory. See the Schedule of Classes for specific topics to be offered each semester.

**DANC 450. Professional Project. 2-9 Hours.**

Semester course; 3-9 credits. May be repeated for a maximum of 12 credits. Prerequisite: dance major. An individualized program in research and/or practicum within a professionally-oriented organization, subject to approval of the department faculty.

**DANC 451. Careers in Dance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: dance major. Realistic aspects of the dance profession, as performer, teacher and researcher. The student's learning experience culminates in a final project that enhances and challenges the student in both areas of performance and choreography. The project must attain public performance status.

**DANC 460. Business of Dance. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: UNIV 200. Enrollment restricted to dance majors. Investigation of diverse business models in dance performance, creation, production and administration.

**DANC 490. Senior Project. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: dance major; DANC 302, 303 and 304; and departmental approval. The culmination of the student's learning experience in a final project that enhances and challenges the student in both areas of performance and choreography. The project must attain public performance status.

**DANC 491. Topics in Dance. 1-4 Hours.**

Semester course; 1-4 credits. May be repeated for a maximum of 8 credits. Prerequisite: permission of instructor. A seminar or workshop on a selected issue or topic in the field of dance. See the Schedule of Classes for specific topics to be offered each semester.

**DANC 492. Independent Study in Dance. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of six credits. Prerequisites: dance major status and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

**Dance and Choreography Lab (DANZ)****DANZ 111. Ballet Technique I Laboratory. 1 Hour.**

Continuous courses; 2 studio hours. 1-1 credit. These courses may be repeated for a maximum of 4 credits on the recommendation of the chair. Prerequisites: completion of DANZ 111 to enroll in DANZ 112. Corequisites: DANC 111-112. Dance major or permission of instructor. Reinforcement in the study of ballet technique at the fundamental level. Emphasis focusing on alignment and in-depth practice of ballet steps. An extension of DANC 111-112 to be taken concurrently.

**DANZ 112. Ballet Technique I Laboratory. 1 Hour.**

Continuous courses; 2 studio hours. 1-1 credit. These courses may be repeated for a maximum of 4 credits on the recommendation of the chair. Prerequisites: completion of DANZ 111 to enroll in DANZ 112. Corequisites: DANC 111-112. Dance major or permission of instructor. Reinforcement in the study of ballet technique at the fundamental level. Emphasis focusing on alignment and in-depth practice of ballet steps. An extension of DANC 111-112 to be taken concurrently.

**DANZ 211. Ballet Technique II Laboratory. 1 Hour.**

Continuous courses; 2 studio hours. 1-1 credit. These courses may be repeated for a maximum total of 4 credits on the recommendation of the chair. Prerequisites: dance major and DANC/DANZ 112, or departmental approval; completion of DANZ 211 to enroll in DANZ 212. A reinforcement in the study of ballet technique at the intermediate level. An extension of DANC 211-212 to be taken concurrently.

**DANZ 212. Ballet Technique II Laboratory. 1 Hour.**

Continuous courses; 2 studio hours. 1-1 credit. These courses may be repeated for a maximum total of 4 credits on the recommendation of the chair. Prerequisites: dance major and DANC/DANZ 112, or departmental approval; completion of DANZ 211 to enroll in DANZ 212. A reinforcement in the study of ballet technique at the intermediate level. An extension of DANC 211-212 to be taken concurrently.

**DANZ 311. Ballet Technique III Laboratory. 1 Hour.**

Continuous courses; 2 studio hours. 1-1 credit. May be repeated for a maximum total of 6 credits on the recommendation of the chair. Prerequisites: completion of DANZ 311 to enroll in DANZ 312. Dance major and placement audition or permission of the chair. Reinforcement in the study of ballet technique at the advanced level. May be taken concurrently with DANC 311-312.

**DANZ 312. Ballet Technique III Laboratory. 1 Hour.**

Continuous courses; 2 studio hours. 1-1 credit. May be repeated for a maximum total of 6 credits on the recommendation of the chair. Prerequisites: completion of DANZ 311 to enroll in DANZ 312. Dance major and placement audition or permission of the chair. Reinforcement in the study of ballet technique at the advanced level. May be taken concurrently with DANC 311-312.

**DANZ 411. Ballet Technique IV Laboratory. 1 Hour.**

Continuous courses; 2 studio hours. 1-1 credit. May be repeated for a maximum total of 4 credits on the recommendation of the chair. Prerequisites: completion of DANZ 411 to enroll in DANZ 412. Dance major and placement audition or permission of the chair. Reinforcement in the study of ballet technique at the preprofessional level. An extension of DANC 411-412, which can be taken concurrently.

**DANZ 412. Ballet Technique IV Laboratory. 1 Hour.**

Continuous courses; 2 studio hours. 1-1 credit. May be repeated for a maximum total of 4 credits on the recommendation of the chair. Prerequisites: completion of DANZ 411 to enroll in DANZ 412. Dance major and placement audition or permission of the chair. Reinforcement in the study of ballet technique at the preprofessional level. An extension of DANC 411-412, which can be taken concurrently.

**Fashion Design and Merchandising (FASH)****FASH 145. Computers for Fashion I. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Laptop computer required. Basic computer skills required. This course introduces students to contemporary technology with emphasis on basic computer graphics software used in the fashion industry today.

**FASH 201. Construction Techniques. 3 Hours.**

Semester course; 1 lecture and 4 studio hours. 3 credits. The basic principles involved in garment construction with emphasis on professional design-room practices in sewing, pressing and finishing of garments. Knowledge of basic sewing is advisable.

**FASH 202. Draping. 3 Hours.**

Semester course; 1 lecture and 4 studio hours. 3 credits. Basic principles of three-dimensional patternmaking by draping muslin on a dress form. Student will be required to purchase the specified dress form.

**FASH 203. Patternmaking. 3 Hours.**

Continuous courses; 1 lecture and 4 studio hours. 3-3 credits. Prerequisite: completion of FASH 203 to enroll in FASH 204. Basic principles of patternmaking, developing various styles from master patterns and creating designs to be constructed in muslin. Students also will draft a set of master patterns and learn to "true" the pattern to produce production-ready patterns.

**FASH 204. Patternmaking. 3 Hours.**

Continuous courses; 1 lecture and 4 studio hours. 3-3 credits. Prerequisite: completion of FASH 203 to enroll in FASH 204. Basic principles of patternmaking, developing various styles from master patterns and creating designs to be constructed in muslin. Students also will draft a set of master patterns and learn to "true" the pattern to produce production-ready patterns.

**FASH 205. Fashion Drawing I. 3 Hours.**

Continuous courses; 1 lecture and 4 studio hours. 3-3 credits. Prerequisite: completion of FASH 205 to enroll in FASH 206. Introduction to the fashion figure working from models and photographs. Covers flat drawing techniques and fashion design theory. Explores different media and the use of color.



**FASH 206. Fashion Drawing I. 3 Hours.**

Continuous courses; 1 lecture and 4 studio hours. 3-3 credits.  
Prerequisite: completion of FASH 205 to enroll in FASH 206.  
Introduction to the fashion figure working from models and photographs. Covers flat drawing techniques and fashion design theory. Explores different media and the use of color.

**FASH 210. Visual Merchandising. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Theory and practical application of visual merchandising techniques in the fashion industry. Development of design concepts, fixturing, layout and presentation for retail, manufacturing and special events. Use of computer-aided design.

**FASH 240. Survey of the Fashion Industry I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of the apparel industry emphasizing the role of the designer and the various stages of production.

**FASH 241. Survey of the Fashion Industry II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An analysis of the apparel industry emphasizing retail aspects.

**FASH 245. Computers for Fashion II. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits.  
Prerequisites: FASH 145. Laptop computer required. Assumes basic computer skills. This course introduces advanced skills in technology by utilizing graphic, illustration and desktop publishing software as they are used in the fashion industry.

**FASH 250. Concepts of Fashion Merchandising Environment. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Basic research techniques and analysis skills for evaluating contemporary fashion and apparel topics.

**FASH 260. Survey of Luxury Fashion. 3 Hours.**

Semester course; 3 lecture hours. 3 credits Prerequisites: FASH 240 and FASH 241. Enrollment restricted to fashion design and merchandising majors. Provides an overview of the luxury fashion industry. The class includes the history of the luxury fashion industry, as well as covering the forecasting, development, branding, marketing, buying, selling and counterfeiting of luxury fashion products. Students explore the luxury fashion industry through lectures, assignments and face-to-face exposure to suppliers, manufacturers and retailers in the luxury sector.

**FASH 290. Textiles for the Fashion Industry. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is designed to develop an understanding of the factors which influence the tactile behaviors of fabrics during garment design, manufacture and wear. Apparel fiber construction, finish and properties both natural and man-made will be analyzed.

**FASH 301. Design I Studio. 3 Hours.**

Semester course; 1 lecture and 4 studio hours. 3 credits. May be repeated. Prerequisite: completion of all sophomore studio courses. A series of courses that focus on selected topics in design, reflecting current fashion emphasis. See the Schedule of Classes for specific topics to be offered each semester.

**FASH 302. Design I Studio. 3 Hours.**

Semester course; 1 lecture and 4 studio hours. 3 credits. May be repeated. Prerequisite: completion of all sophomore studio courses. A series of courses that focus on selected topics in design, reflecting current fashion emphasis. See the Schedule of Classes for specific topics to be offered each semester.

**FASH 319. Contemporary Fashion. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. An in-depth study of fashion beginning at the Industrial Revolution and continuing to the present from a historical and socioeconomic point of view. Hands-on examination of vintage garments and field trips to museum collections.

**FASH 330. The Business of Design. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course introduces basic global economics and general design business concepts such as the free enterprise system, legal forms of business and financial considerations. It also surveys business and management practices such as planning, decision-making, communication, global ethics, marketing, human resources, finance and entrepreneurial skills needed to open a design business. Crosslisted as: IDES 330/GDES 330.

**FASH 341. Merchandise Planning and Control. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Theory and mathematical application of the major elements of retail buying and merchandising. Discussion covers planning and control of inventory, profit analysis, merchandise pricing and purchase negotiation.

**FASH 342. Retail Buying Simulation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FASH 341 and INFO 162. Practical application of retail buying in relation to the calculations for a six-month buying plan for a department within a department store. The simulation includes projection of sales, stock levels, markdowns, purchases, gross margins, markup, etc.

**FASH 343. Fashion Forecasting. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Using basic principles to identify, track and analyze current trends, students will develop a fashion forecast. Demographic, economic, social and historical forces of behavior will be evaluated.

**FASH 345. Computers for Fashion Design: Adobe Photoshop and Illustrator. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Laptop computer and basic computer skills required. Students will learn to conceptualize fashion design while gaining an understanding of graphic and illustration software through the utilization of the computer as a drawing and communication tool.

**FASH 350. Fashion Promotion. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. Through lecture and field experience, students are exposed to technical and creative aspects of fashion promotion and public relations. A variety of media are utilized. Students may be required to spend time outside the classroom on promotional activities.

**FASH 370. Design History: 20th and 21st Centuries. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTF 105-106. Study of the major theories and styles on communication arts, fashion and interior environments of the 20th and 21st centuries. Contemporary analysis of cultural conditions and the manner in which designers respond to those conditions. Crosslisted as: GDES 370/IDES 370.

**FASH 380. Fashion Branding. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Students will understand the concept of fashion branding and the processes necessary to successfully develop or redevelop a fashion brand.



**FASH 390. Historic and Ethnic Textiles. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FASH 290 or IDES 446 or permission of instructor. An examination of the history of textile design and production around the world. Crosslisted as: INTL 390.

**FASH 391. Fashion Workshop. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of 6 credits. A topical workshop offered in various areas of fashion not included in the regular curriculum. See the Schedule of Classes for specific topics to be offered each semester.

**FASH 401. Design II Studio. 3 Hours.**

Semester course; 1 lecture and 4 studio hours. 3 credits. May be repeated. Prerequisites: completion of all sophomore studio courses and permission of instructor. A series of upper-level design classes for the advanced or skilled student, reflecting current topics in the fashion industry. See the Schedule of Classes for specific topics to be offered each semester.

**FASH 402. Design II Studio. 3 Hours.**

Semester course; 1 lecture and 4 studio hours. 3 credits. May be repeated. Prerequisites: completion of all sophomore studio courses and permission of instructor. A series of upper-level design classes for the advanced or skilled student, reflecting current topics in the fashion industry. See the Schedule of Classes for specific topics to be offered each semester.

**FASH 403. Design Theory and Illustration I. 3 Hours.**

Semester course; 1 lecture and 4 studio hours. 3 credits. May be repeated. Prerequisite: completion of all Department of Fashion sophomore studio courses. A series of design theory and illustration topics that address current fashion and support the Department of Fashion design courses. See the Schedule of Classes for specific topics to be offered each semester.

**FASH 404. Design Theory and Illustration II. 3 Hours.**

Semester course; 1 lecture and 4 studio hours. 3 credits. May be repeated. Prerequisites: Completion of all Department of Fashion sophomore studio courses and permission of instructor. A series of advanced design theory and illustration topics that address current fashion, challenge the skilled student and support the Department of Fashion design courses. See the Schedule of Classes for specific topics to be offered each semester.

**FASH 442. Advanced Show Production. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A practical application of the production, planning and execution of a professionally staged and choreographed fashion show featuring the Department of Fashion Design and Merchandising students' juried work.

**FASH 443. Supervision and Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The study of advanced leadership skills as they relate to the fashion industry. Topics include team building, negotiations, time and stress management, and communications. Emphasis placed on leadership and supervision skills across cultures.

**FASH 445. Fashion Entrepreneurship. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FASH 341 and FASH 342. Studies operational functions as related to the objective and decision-making procedures inherent in successful small-business retailing. Quantitative strategies will be applied as students develop a model plan for a retail business.

**FASH 450. Line Development. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Pre- or corequisite: FASH 341. Students will learn the fundamentals of producing a line of apparel, accessories or home fashions from conception to consumer. Emphasis will be placed on market research, specification sheets, costing, sourcing, production and sales.

**FASH 451. Importing and Exporting Fashion. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FASH 450. An overview and introduction to import/export theory, government regulations and global sourcing. Students will gain insight to the dynamics and cultures of the international fashion marketplace.

**FASH 490. Fashion Seminar. 1 Hour.**

Short course (5 weeks); 3 lecture hours. 1 credit. A professional seminar for senior fashion majors. Lectures will cover career opportunities and job preparation.

**FASH 492. Independent Study in the Fashion Industry. 1-3 Hours.**

Semester course; 1-3 credits. May be repeated. Prerequisite: junior or senior standing as a major in fashion design or fashion merchandising. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor; approval of department chair necessary prior to registration. This course will be limited to those students who have demonstrated intense commitment to a particular area of study within the fashion industry.

**FASH 493. Fashion Internship. 1-6 Hours.**

Semester course; variable hours. 1-6 credits. Repeatable in combinations for a maximum of 6 credits. Open to junior- and senior-level fashion majors only. An on-the-job practicum in which students apply the formal classroom and studio training they have received in their option (design, merchandising).

**Graphic Design (GDES)****GDES 202. Design Technology. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: successful completion of the Art Foundation Program. A design foundation workshop that emphasizes skills development and application of design technology: time and project management, visual thinking, image capturing and editing.

**GDES 205. Design Methods and Processes. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. An in-depth investigation of the theoretical aspects of the design process within the context of designing effective visual communications.

**GDES 211. Typography I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. An introduction to communication problem-solving through the visual medium of language. The fundamentals of typography and typographic design are explored in experimental and practical projects.

**GDES 212. Design Form and Communication. 3,6 Hours.**

Semester course; 2 lecture and 3 studio hours or 4 lecture and 6 studio hours. 3 credits for Richmond; 6 credits for VCUQ. The relationship of form and communication in graphic design is explored through theoretical and applied projects. The impact of typography and imagery and their syntactic relations upon audience and content is stressed.

**GDES 213. Typography II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: GDES 211. An intermediate exploration of typography as an expressive and functional communication vehicle. Emphasis is placed on defining effective design criteria to meet the reader's needs, the communicator's intent and the designer's formal sensibilities.

**GDES 214. Imaging I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: successful completion of the Art Foundation Program. Cannot be taken for credit with COAR 331. A studio course focusing on the use of digital imaging techniques for communication purposes. The processes and techniques for making and working with digital images are explored.

**GDES 216. Imaging II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: GDES 214. A studio course focusing on the creation of visual images for communication purposes. The processes and media for making visual images and the limits of visual literacy are explored.

**GDES 252. History of Visual Communication. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An investigation of contemporary visual communication concepts, media and images, and their role in contemporary society.

**GDES 253. Theory and Philosophy of Visual Communication. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An overview of theoretical and philosophical issues influencing the practice of visual communication design.

**GDES 300. Creative Strategies. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. A course in which alternative creative communication problem-solving strategies are investigated.

**GDES 301. Beginning Letterpress. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. An introductory/intermediate printmaking studio course designed for students interested in developing their visual vocabulary in letterpress and relief printing. Students will undertake critical analysis of the letterpress medium and utilize techniques to develop and produce finished editions of each assigned task.

**GDES 302. Book Arts. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. An introduction to the tools, materials and craft of contemporary bookmaking. Investigation of bookbinding, handcraft and related techniques.

**GDES 308. Web Design. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: permission of instructor. A course developing the design of websites. Emphasis is placed on the visual design, navigation, development, communication and authoring of websites.

**GDES 330. The Business of Design. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduces basic global economics and general design business concepts such as the free enterprise system, legal forms of business and financial considerations. Also surveys business and management practices such as planning, decision-making, communication, global ethics, marketing, human resources, finance and entrepreneurial skills needed to open a design business. Crosslisted as: IDES 330/FASH 330.

**GDES 343. Systems in Design. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: successful completion of the sophomore GDES courses. The study of systematic and methodological approaches to communication design through the solving of complex problems in visual communication. Emphasis is placed on objective process and research in approaches to various professional situations.

**GDES 345. Print I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: UNIV 200 or HONR 200 and successful completion of the sophomore GDES courses. An introduction to the design process and applied realizations of print-based materials and outcomes. Addresses the form and communication of the printed page from the tradition of print to the organizational principles outside that tradition. Objectives accomplished through lectures, demonstrations and problem-solving.

**GDES 346. Visual Narrative I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: successful completion of the sophomore GDES courses. Studio course that introduces the conceptual and technical issues involved in the design and production of sequential documents and time-based compositions. Addresses the possibilities and limitations of the integration of word, image, video and sound as they relate to problem-solving in visual communication.

**GDES 347. Interaction I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: successful completion of the sophomore GDES courses. An introduction to the conceptual and technical issues involved in the design and production of interactive documents and environments. Addresses the possibilities and limitations of computer-generated images, sound and digital video as they relate to problem-solving in visual communication.

**GDES 356. Studio Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of business and management factors that relate to creative design. Topics include marketing, structure and organization; financial factors; ethical and legal aspects; and management of design, illustration and photography studios.

**GDES 365. Print II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: GDES 345. An advanced studio course devoted to the study of systematic and methodological approaches to the design process and applied realization of print-based materials and outcomes. Emphasizes rigorous objective and experimental research methods in approaches to various professional situations. Objectives accomplished through lectures, demonstrations and team-based approaches to problem-solving.

**GDES 366. Visual Narrative II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: GDES 346. A studio course devoted to the design and production of advanced projects in sequential design, with focus on research, problem definition and team-based approaches to problem-solving.

**GDES 367. Interaction II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: GDES 347. A studio course devoted to the design and production of advanced projects in interaction design and experience design with focus on research, problem definition and team-based approaches to problem-solving.

**GDES 370. Design History: 20th and 21st Centuries. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTF 105-106. Study of the major theories and styles on communication arts, fashion and interior environments of the 20th and 21st centuries. Contemporary analysis of cultural conditions and the manner in which designers respond to those conditions. Crosslisted as: FASH 370/IDES 370.

**GDES 391. Lecture Topics in Design. 1-3 Hours.**

Semester course; variable hours. 1-3 credits per semester. May be repeated for a maximum of 9 credits. Topical lectures in design issues and visual communications.

**GDES 392. Research/Individual Study. 2-4 Hours.**

Semester course; 1-2 lecture and 3-6 studio hours. 2-4 credits. May be repeated for a total of 6 credits. Enrollment requires permission of instructor, approval of faculty adviser and chair. The structuring, research, execution and presentation of an independent project in visual communications under the direction of a faculty adviser. The student will be encouraged to become a self-generating problem seeker and solver with the ability to carry out self-stated goals.

**GDES 401. Advanced Letterpress. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for a maximum of 6 credits. Prerequisite: GDES 301. An advanced print studio course designed for students interested in exploring their visual vocabulary in digital and letterpress relief printing. Students will undertake critical analysis of the combined media of digital and letterpress and utilize techniques inherent within each technology to develop and produce finished editions.

**GDES 403. Design Activism. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. An overview of the ethical issues faced by practitioners in the field of design and proactive roles available outside of the traditional client/designer relationship. The course presents critiques of the various roles that designers play in the areas of marketing, advertising, product development, and as entrepreneurs and content generators. The course includes a component in which problem identification, team work and real-world engagement are required.

**GDES 404. Typeface Design. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Glyph construction is explored through historical and methodological analysis as well as the creation of typographic systems. Formal mechanics of typefaces are emphasized in discussion of their function as vehicles for communication. Both the functional and expressive nature of typefaces are examined through hands-on exercises.

**GDES 408. Advanced Web Design. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: GDES 308. Investigation into the design and development of dynamic websites. Introduces database integration, webhost management and advanced coding techniques. Emphasis is placed on the semantic design and development of content-rich websites and blogs.

**GDES 412. Typography III. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: successful completion of the sophomore GDES courses. Advanced problems in typographic design with emphasis upon the development of a personal creative approach to form and communication.

**GDES 413. Package Design. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: GDES 213 and 367. Theoretical and studio investigation of three-dimensional structural principals as they relate to the area of packaging, exhibition and environmental design.

**GDES 414. Exhibition and Environmental Graphic Design. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: GDES 213 and 366. Study of the presentation of information in large-scale, three-dimensional formats. Exploration of exhibition and environmental design, including developing imagery and typography, understanding the use of "wayfinding" (identification, interpretation and orientation) and human factors, communicating of programmed content.

**GDES 417. Interdisciplinary Team Design. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: GDES 213 and 366. Advanced projects in visual communication in which student design teams solve complex problems requiring collaboration.

**GDES 418. Design Center. 3-9 Hours.**

Semester course; 2-6 lecture and 3-9 studio hours. 3-9 credits. May be repeated for a total of 12 credits. Enrollment requires portfolio review by faculty. A professional studio to give students practicum experience working with faculty on self-initiated and client-initiated, real-world design projects.

**GDES 445. Problem Seeking. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A seminar exploring the nature, scope and implications of defining design objectives in terms of limitations, requirements and potentials of a product's implementation, performance and life cycle.

**GDES 470. Senior Seminar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of selected theoretical, historical, aesthetic and social areas of concern to the graphic designer. Scholarly research, critical analysis and discussion are expected.

**GDES 472. Senior Studio. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. A capstone course oriented toward the creation of a professional portfolio, self-promotional materials and business system. The course culminates in the annual Senior Show.

**GDES 491. Studio Topics in Design. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for a total of 12 credits. Topical studio focusing on research and experimentation in specialized visual communication media.

**GDES 492. Design Internship. 1-3 Hours.**

Semester course; 1-3 credits. May be repeated for a maximum of 3 credits. Prerequisites: senior standing, 3.0 GPA or permission of the chair. Supervised pragmatic work experiences. Training is provided under the direction and supervision of qualified professional practitioners.

## Interior Design (IDES)

**IDES 103. Introductory Studio Course. 2 Hours.**

Continuous course; 1 lecture and 2 laboratory hours. 2-2 credits. This course is an introduction to the complex and multifaceted field of interior design as an applied art and as a business for non-interior design majors. Basic design elements, principles and practices, historical and related architectural background material will be reviewed.

**IDES 104. Introductory Studio Course. 2 Hours.**

Continuous course; 1 lecture and 2 laboratory hours. 2-2 credits. This course is an introduction to the complex and multifaceted field of interior design as an applied art and as a business for non-interior design majors. Basic design elements, principles and practices, historical and related architectural background material will be reviewed.

**IDES 201. Introductory Interior Design Studio I. 4 Hours.**

Semester course; 2 lecture/seminar and 6 studio hours. 4 credits.

Prerequisites: all Art Foundation courses. Corequisites: IDES 211 and 231. Interior design majors only; other School of the Arts majors by approval. Introduction to identification and applications of fundamental interior design issues through applied projects. Emphasis includes developing design ideas, understanding design philosophies, design principles and elements, human factors, defining and solving problems creatively, analyzing spatial and functional requirements, applying design processes, creating an aesthetic space, and preparing a presentation as related to interior design.

**IDES 202. Introductory Interior Design Studio II. 4 Hours.**

Semester course; 2 lecture/seminar and 6 studio hours. 4 credits.

Prerequisites: IDES 201, 211 and 231. Corequisites: IDES 212, 252 and 311. Interior design majors only; other School of the Arts majors by approval. Expands upon the interior design issues introduced in IDES 201 through their application in small scale interiors projects of increasing size and complexity. Emphasizes the further development of methods and processes for design development, understanding of basic design principles and elements, and ways of analyzing design requirements through written, oral, graphic and three-dimensional documentation.

**IDES 211. Interior Graphics I. 3 Hours.**

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisites: all Art Foundation courses. Corequisites: IDES 201 and 231. Interior design majors only; other School of the Arts majors by approval. Introduction to manual graphic communication techniques in interior design including drafting, sketching, rendering, perspective drawing, presentation formats and model-making for professional graphic presentations.

**IDES 212. Interior Graphics II. 3 Hours.**

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisites: all Art Foundation courses, IDES 201, 211 and 231. Corequisites: IDES 202, 252 and 311. Interior design majors only; other School of the Arts majors by approval. Laptop computer required. Introduction to computer graphic communication language and techniques in interior design drafting, rendering, perspective drawing, presentation formats and 3-D imaging for professional graphic presentations.

**IDES 231. Fundamentals of Interior Design. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: all Art Foundation courses. Required of all incoming interior design majors. Open to interior design majors and home fashion merchandising majors only. Interior design majors are required to enroll concurrently in IDES 201 and 211. Introduction to the theories, methods and processes of interior design. Facilitates the transition of skills and knowledge from the Art Foundation Program to specific interior design applications and focuses on analysis and evaluation of interior environments as a support and supplement to the studio experience.

**IDES 241. Physical and Social Behavior. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: IDES 231. Theories of behavioral and social aspects of interior design. Study of how people interpret, evaluate and act in the built environment. Social, cultural and economic factors are included.

**IDES 251. Historic Environments: Ancient Through 19th Century. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103 and 104. Study of the major paradigms, theories and styles of the built environment (interior design, furniture and architecture) from antiquity to the late 19th century. Contemporary analysis of cultural conditions and the manner in which designers and architects respond to those conditions.

**IDES 252. Historic Environments: 20th-21st Centuries. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103 and 104. Study of the major paradigms, theories and styles of architecture, interior environments and furniture from the beginnings of modernism to the present day. Contemporary analysis of cultural conditions and the manner in which designers and architects respond to those conditions.

**IDES 301. Interior Design Studio I. 4 Hours.**

Semester course; 2 lecture/seminar and 6 studio hours. 4 credits.

Prerequisites: UNIV 200 or HONR 200 and successful completion of the interior design sophomore portfolio review. Corequisites: IDES 312, 321 and 323. Interior design majors only. Laptop computer required. Discussion and application of design philosophies, theories and creative design strategies at the intermediate level. Emphasis includes: research, survey and analysis, design processes, spatial and functional analysis, design elements and principles, human factors, creative problem-solving, code requirements, selection of interior components, and preparation of a presentation.

**IDES 302. Interior Design Studio II. 4 Hours.**

Semester course; 2 lecture/seminar and 6 studio hours. 4 credits.

Prerequisite: IDES 301. Corequisite: IDES 431. Interior design majors only. Laptop computer required. Continued discussion and application of design philosophies, theories and creative design strategies at the intermediate level. Emphasis includes: research, survey and analysis, design processes, spatial and functional analysis, design elements and principles, human factors, creative problem-solving, code requirements, selection of interior components, and preparation of a presentation.

**IDES 311. Advanced Interior Graphics I. 3 Hours.**

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisites: IDES 201, 211 and 231. Corequisites: IDES 202, 212 and 252. Interior design majors only. Laptop computer required. Advanced manual and computer graphic communication techniques in interior design including drafting, sketching, rendering, perspective drawing, presentation formats and model-making for professional graphic presentations. Computer graphic techniques including software such as AutoCAD, Adobe Photoshop, Adobe Illustrator and Dreamweaver.

**IDES 312. Advanced Interior Graphics II. 3 Hours.**

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: IDES 311. Interior design majors only. Laptop computer required. Advanced computer graphic communication techniques in interior design including drafting, rendering, perspective drawing, presentation formats and 3-D imaging for professional graphic presentations.

**IDES 321. Interior Materials and Textiles. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Interior design and home fashion merchandising students only. Investigation, selection and practical application of materials and textiles in interior environments.



**IDES 322. Color in Interior Environments. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: all Art Foundation Program studio courses and IDES 231 or comparable experience by approval. Interior design and School of the Arts majors only. Advanced study of color and its impact on interior spaces; theory and practical applications.

**IDES 323. Light and Color in Interior Environments. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: successful completion of the interior design sophomore portfolio review. Corequisites: IDES 301 and 312. Interior design and School of the Arts majors only. The study of illumination and color and their impact on people in interior spaces; theory and practical applications.

**IDES 324. Furniture Design. 3 Hours.**

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: successful completion of the interior design sophomore portfolio review or permission of instructor. Interior design, crafts, sculpture and theater design majors only. Advanced study of furniture design and custom millwork as related to the design of interior environments. Original student designs are developed through the study of structure and materials.

**IDES 330. The Business of Design. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course introduces basic global economics and general design business concepts such as the free enterprise system, legal forms of business and financial considerations. It also surveys business and management practices such as planning, decision-making, communication, global ethics, marketing, human resources, finance and entrepreneurial skills needed to open a design business. Crosslisted as: FASH 330/GDES 330.

**IDES 370. Design History: 20th and 21st Centuries. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTF 105-106. Study of the major theories and styles on communication arts, fashion and interior environments of the 20th and 21st centuries. Contemporary analysis of cultural conditions and the manner in which designers respond to those conditions. Crosslisted as: FASH 370/GDES 370.

**IDES 391. Topics in Interior Design. 1-4 Hours.**

Semester course; 1-4 studio or lecture hours. 1-4 credits. May be repeated for a maximum of 8 credits. Prerequisite: permission of the instructor. A study of a topical issue in interior design. See the Schedule of Classes for specific topics to be offered each semester.

**IDES 400. Senior Interior Design Studio I. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: IDES 302. Corequisite: IDES 441. Interior design majors only. Laptop computer required. Study of construction documents on the computer as related to the design of interior environments and as applied to a studio project.

**IDES 401. Senior Interior Design Studio II. 4 Hours.**

Semester course; 2 lecture/seminar and 6 studio hours. 4 credits. Prerequisites: IDES 400 and 441. Corequisite: IDES 442. Interior design majors only. Department-approved senior interior design project. Advanced design experience of student's choice of an interior environment of complex scope and scale to meet the needs of specific clients and prepare students for the practice of the profession. The project addresses issues of design of the 21st century and integrates all aspects of the curriculum.

**IDES 421. Construction Documents. 3 Hours.**

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisites: all Art Foundation Program studio courses and IDES 201, 202, 231, 212, 312 and concurrent enrollment in IDES 301, 302, 303, 304 or 401. Interior design majors only. Laptop computer required. Study of construction documents on the computer as related to the design of interior environments.

**IDES 422. Building Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: IDES 301 and 323. Corequisite: IDES 302. Interior design majors only. Contemporary theories and techniques in the design of buildings as related to interior design, small structural considerations, HVAC, acoustics, plumbing and the attributes of materials.

**IDES 431. ID Business Practices. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: IDES 201 and IDES 231. Interior design majors only. Writing intensive. Advanced study of the interior design profession as related to professional and business practices including: responsibilities, services, ethics, business and project management, and marketing.

**IDES 441. Senior Design Seminar I. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: IDES 302. Corequisite: IDES 400. Interior design majors only. Discussions of current design theories, issues and concerns of the built environment, future studies and the global community as applied to senior studio.

**IDES 442. Senior Design Seminar II. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: IDES 400 and 441. Corequisite: IDES 401. Interior design majors only. Continued discussions of current design theories, issues and concerns about the built environment, futures studies and the global community as applied to senior studio.

**IDES 491. Topics in Interior Design. 1-4 Hours.**

Semester course; 1-4 credits. May be repeated for a maximum of 8 credits. Prerequisite: permission of the instructor. An in-depth study of a topical issue in interior design. See the Schedule of Classes for specific topics to be offered each semester.

**IDES 492. Independent Study in Interior Design. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for maximum of six credits. Prerequisite: junior or senior standing as a major in interior design. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

**IDES 493. Interior Design Internship. 3 Hours.**

Semester course; 3 credits. Prerequisite: IDES 431. Interior design majors only. Provides supervised practical work experiences that are coordinated with professional interior designers in the field. Formal arrangements must be made and approved by coordinator or department chair.

## Kinetic Imaging (KINE)

**KINE 208. Introduction to Computer Techniques. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: successful completion of Art Foundation Program and permission of department chair. Covers basic video editing techniques and the software necessary for contemporary video, animation and sound art practice.



**KINE 233. Media Arts Survey. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A historical overview of contemporary media art to include video art, sound art, the Internet and other technology-based art movements.

**KINE 234. Animation I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. An introduction to the techniques and principles of animation as frame-by-frame sequential media, covering preproduction methods particular to animation, and a survey of historical techniques with an emphasis in viewing and responding to animated work.

**KINE 235. Animation II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: KINE 208 and KINE 234. Students will build on skills learned in KINE 234. Topics covered include principles of animation and timing, intermediate digital skills, narrative and experimental structures in animation.

**KINE 236. Video I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: KINE 208. A study of the processes and equipment necessary for producing and editing work on videotape.

**KINE 237. Sound Communications I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: KINE 208. The basic theory and production of media-based sound.

**KINE 291. Special Topics. 1-4 Hours.**

Semester course; 1-4 variable hours. 1-4 credits. May be repeated for a maximum of eight credits. Various topics of special interest will be offered on a changing basis.

**KINE 308. Web Technologies for Media Artists. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: KINE 208. This course investigates current and potential uses of online media. Students create content and/or disseminate their work using Internet technology; this includes inquiry into online media, social media tools and emerging web technologies.

**KINE 335. Motion Graphics. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for a maximum of 6 credits. Prerequisite: KINE 235. Students will study the creation of moving graphic elements as an extension of animation and video art. The history and development of motion graphics in art, broadcast and effects studios will be examined. Students will engage in innovative development of motion graphics using current digital technology combined with experimental techniques.

**KINE 336. Video II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: KINE 236. A comprehensive course in video communication nonnarrative strategies and documentary formats.

**KINE 337. Sound Communication II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for a maximum of 6 credits. Prerequisite: KINE 237. Continues the focus and specialization of sound design introduced in the prerequisite course, supporting video and animation production as well as developing an awareness of sound art. Conventional and experimental approaches to sound design are covered through a series of project assignments. Students will use standard audio equipment and also more specialized technology, such as a Moog synthesizer and Theremin.

**KINE 338. 3-D Computer Animation I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: KINE 208. A comprehensive introduction to the use of the computer for modeling, rendering and animating three-dimensional objects and environments.

**KINE 357. Critical Issues in the Media. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Topics, theory and genre affecting media and time-based mediums are explored through critical discourse, readings, screenings and lectures.

**KINE 392. Research/Individual Study. 1-4 Hours.**

Semester course; 1-2 lecture and 3-6 studio hours. 1-4 credits. May be repeated for a total of 8 credits. Enrollment requires permission of instructor, approval of faculty adviser and chair. The structuring, research, execution and presentation of an independent project in visual communications under the direction of a faculty adviser. The student will be encouraged to become a self-generating problem-seeker and -solver with the ability to carry out self-stated goals.

**KINE 403. Senior Studio. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: senior status. To be taken in the last semester of the senior year. Critical analysis and development of the student's exit portfolio with emphasis on strengthening focus and concept inherent in the body of work.

**KINE 434. Animation III. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for a maximum of 9 credits. Prerequisite: KINE 235. Students will work with advanced analogue and digital experimental animation techniques. Developing creative problem-solving strategies, students will be introduced to animation as a fine art practice, to animation on and off the screen, and in an installation and performance context.

**KINE 436. Video III. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: KINE 336. A comprehensive course in video communication exploring narrative strategies and form-content relationships.

**KINE 438. 3-D Computer Animation II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for a maximum of 9 credits. Prerequisite: KINE 338. Advanced study of three-dimensional computer animation.

**KINE 439. Video IV. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for a maximum of 9 credits. Prerequisite: KINE 436. An advanced course focusing on short subject pieces in video.

**KINE 457. Socially Engaged Media. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for a maximum of 6 credits. Prerequisite: KINE 357. A studio multimedia course involving the creation of diverse artworks in a social, political and public context. Students engage in weekly projects, both independent and collaborative, along with presentations, discussions and ongoing blog entries.

**KINE 458. Virtual Interactive Worlds. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Maybe repeated for a maximum of 6 credits. Prerequisite: KINE 338 or permission of instructor. A transdisciplinary course exploring alternative game strategies, virtual environment aesthetics, interactivity and mixed-reality in a team project setting.

**KINE 464. Animation IV. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for a maximum of 9 credits. Prerequisite: KINE 434. An advanced course in animation studies. Students will produce a self-directed project, with progress reviewed in class critiques through the semester, culminating in a final animation-based project.

**KINE 491. Studio Topics. 1-4 Hours.**

Semester course; variable credit (1 lecture and 2 studio hours per credit). 1-4 credits. May be repeated for a total of 12 credits. Topical studio focusing on research and experimentation in specialized visual communication media.

**KINE 492. Internship. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for a maximum of 6 credits. Prerequisite: permission of the chair. Open to kinetic imaging majors only. Creative learning experiences in the professional realm under the direction and supervision of qualified practitioners.

**Music Composition (MUSC)****MUSC 201. Class Composition I. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: MHIS 146. Open to all music majors and required of potential composition majors; the emphasis of this class will be on simple rhythmic and melodic studies.

**MUSC 315. Counterpoint I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 246. This class concentrates on two-part writing, canons, species, exercises, short two-voiced pieces and inventions.

**MUSC 316. Counterpoint II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 246. Availability contingent upon student demand and faculty resources. Three- and four-part writing forms based on the chorale; contrapuntal variation forms and fugue will be studied.

**MUSC 406. Orchestration. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. No degree credit for graduate composition majors. Prerequisite: MHIS 246. Application of idiomatic scoring devices for orchestral instruments and voices in both large and small combinations.

**Music Education (MUED)****MUED 301. Methods and Techniques: Guitar. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. For music education majors only. Achievement of basic performance competencies and teaching knowledge on the guitar including chording, single-string technique, plectrum and finger styles.

**MUED 302. Methods and Techniques: Voice. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. For music education majors only. Achievement of performance competencies in voice including vocal production, diction and solo and group performance.

**MUED 303. Methods and Techniques: Woodwinds. 1 Hour.**

Continuous courses; 2 laboratory hours. 1-1 credit. Prerequisite: completion of MUED 303 to enroll in MUED 304. For music education majors only. Achievement of performance competencies and teaching knowledge on flute, clarinet, oboe, bassoon and saxophone.

**MUED 304. Methods and Techniques: Woodwinds. 1 Hour.**

Continuous courses; 2 laboratory hours. 1-1 credit. Prerequisite: completion of MUED 303 to enroll in MUED 304. For music education majors only. Achievement of performance competencies and teaching knowledge on flute, clarinet, oboe, bassoon and saxophone.

**MUED 305. Methods and Techniques: Brass. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. For music education majors only. Achievement of performance competencies and teaching knowledge on trumpet, baritone, tuba, trombone and French horn.

**MUED 306. Methods and Techniques: Strings. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. For music education majors only. Achievement of performance competencies and teaching knowledge on violin, viola, cello or bass.

**MUED 307. Methods and Techniques: Percussion. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. For music education majors only. Achievement of performance competencies and teaching knowledge on snare drum. Introduction to basic techniques of other percussion instruments.

**MUED 380. Introduction to Music Education. 2 Hours.**

Semester course; 1 lecture and 2 laboratory hours. 2 credits. Prerequisite: passing score on Praxis I or the Virginia Communication and Literacy Assessment or threshold SAT/ACT scores. An introduction to the profession of music education. Emphasis on the study of the historical development of music education in the U.S. along with current thinking, trends, practices and approaches in the profession, and the formation of a personal philosophy of music education. Substantial practicum experience is a fundamental aspect of this course.

**MUED 381. Methods and Practicum in Elementary Music Education. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MUED 380. Study of current methods and materials of music education at the elementary level. Orff, Dalcroze, Kodaly, Gordon and other current music education approaches for the young child will be discussed, observed and demonstrated. An intensive directed practicum is a fundamental aspect of this course.

**MUED 382. Secondary Methods/Practicum and Rehearsal Techniques. 4 Hours.**

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisites: APPM 381, MUED 381 and passing score on the Virginia Communication and Literacy Assessment. Development of the varied skills required to successfully administer a secondary music education program. Emphasis on understanding program structure, development and methodologies; development of conducting technique, rehearsal strategies and selecting/arranging literature appropriate for musical growth of students.

**MUED 384. Marching Band Techniques. 2 Hours.**

Semester course; 1 lecture and 1 laboratory hour. 2 credits. Prerequisite: MUED 380. Discussion of marching band techniques that address the different components of preparation, rehearsal and presentation of events. The application of topics and discussions are presented with marching band choreography using computer software simulation.

**MUED 385. Music Education Technology and Arranging. 2 Hours.**

Semester course; 1 lecture and 1 laboratory hour. 2 credits. Prerequisite: MUED 380. Basic understanding of current technology in the field of music education. Specific skills developed for arranging school-aged ensembles with CAI, sequencing, productivity software and basic sound reinforcement will be the primary focus.

**MUED 483. Special Workshop in Music Education. 0.5-3 Hours.**

Semester course; 0.5-3 credits. Flexible semester courses on selected aspects of music education. See the Schedule of Classes for specific topics to be offered each semester.

**MUED 485. Music Education Student Teaching I: Elementary. 6 Hours.**

6 credits. Prerequisites: MUED 382, APPL 416, passing score on the Praxis II Music Content Knowledge and 2.8 overall GPA. Corequisite: MUED 486. The culminating field experience for music education students. An eight-week directed internship at the elementary general music education level. MUED 485 and 486 provide sequential experience and responsibilities for planning and instruction of music education for children in the P-12 setting.

**MUED 486. Music Education Student Teaching II: Secondary. 6 Hours.**

6 credits. Prerequisites: MUED 382, APPL 416, passing score on the Praxis II Music Content Knowledge and 2.8 overall GPA. Corequisite: MUED 485. The culminating field experience for music education students. An eight-week directed internship at the secondary instrumental or choral music education level. MUED 485 and 486 provide sequential experience and responsibilities for planning and instruction of music education for children in the P-12 setting.

**Music History, Literature and Theory (MHIS)****MHIS 105. Introduction to Writing Music. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisite: completion of MHIS 105 to enroll in MHIS 106. For non-music majors only. Creating and harmonizing melodies, principles of notation and elementary music theory. Second semester emphasis is on creative aspects.

**MHIS 106. Introduction to Writing Music. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisite: completion of MHIS 105 to enroll in MHIS 106. For non-music majors only. Creating and harmonizing melodies, principles of notation and elementary music theory. Second semester emphasis is on creative aspects.

**MHIS 110. Elements of Music. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. No degree credit for music majors. A study of music notation, scale and triad forms. Aural skill development will parallel the theoretical studies. Intended to prepare music majors for core curriculum study.

**MHIS 120. Introduction to World Musical Styles. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Enrollment restricted to music majors. A study of non-European musical cultures and practices. Attention will be given to various aspects of music within those cultures. An emphasis will be placed on the development of active cognitive listening skills through guided listening to selected recorded music from non-European societies.

**MHIS 145. Theory and Aural Skills I. 4 Hours.**

Semester course; 2 lecture and 3 laboratory hours. 4 credits. Open to music majors and minors only. The application of music theory, aural skills and keyboard knowledge are combined in the study of harmonic and melodic structure. Activity begins with rudiments and progresses to diatonic harmony. Emphasis is placed upon the development of aural skills as applied to the presented material.

**MHIS 146. Theory and Aural Skills II. 4 Hours.**

Semester course; 2 lecture and 3 laboratory hours. 4 credits. Prerequisite: MHIS 145. Open to music majors and minors only. The application of music theory, aural skills and keyboard knowledge are combined in the study of harmonic and melodic structure. Activity begins with harmonic voicing and progresses to secondary harmony as applied to phrase structure in music. Emphasis is placed upon the development of aural skills as applied to the presented material.

**MHIS 147. Jazz Theory and Aural Skills. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 145. Theoretical and aural recognition of established melodic, harmonic and rhythmic traditions within jazz so as to apply successfully to creative performance-practice and composition-arranging pursuits.

**MHIS 201. Acoustics. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Recommended prerequisite: MATH 101. Physical properties of sound and wave mechanics applied to the study and analysis of music and musical instruments. Topics will include instrumental and vocal sound production and perception, timbral characteristics and pitch theory.

**MHIS 243. Music Appreciation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Not open to music majors. Designed to encourage understanding of music from selected periods. Development of active cognitive listening skills through guided listening to selected recorded music.

**MHIS 244. Experiencing Music. 3 Hours.**

Semester course; 1 lecture and 2 laboratory hours. 3 credits. Designed for the purpose of developing familiarity with the elements of music that are part of a successful performance and listening experience. Weekly attendance at both VCU and external events is part of the criteria to develop students' awareness of the creative process in shaping a musical performance.

**MHIS 245. Theory and Aural Skills III. 4 Hours.**

Semester course; 2 lecture and 3 laboratory hours. 4 credits. Prerequisites: MHIS 146. Open to music majors. The application of music theory, aural skills and keyboard knowledge are combined in the study of harmonic and melodic structure. Second year studies continue with chromatic harmony and modulations. Emphasis is placed upon the development of aural skills as applied to the presented material.

**MHIS 246. Theory and Aural Skills IV. 4 Hours.**

Semester course; 2 lecture and 3 laboratory hours. 4 credits. Prerequisites: MHIS 245. Open to music majors. The application of music theory, aural skills and keyboard knowledge are combined in the study of harmonic and melodic structure. Final semester of study continues with chromatic harmony and concludes with modern techniques as applied to form in music. Elements of popular styles and jazz are incorporated as appropriate. Emphasis is placed upon the development of aural skills as applied to the presented material.

**MHIS 250. Introduction to African-American Music. 3 Hours.**

Semester courses; 3 lecture hours. 3 credits. An introductory survey of black involvement with the development of music in America from 1607 to the present. African-American musical styles will be studied from many aspects, including their African roots and contemporary popular expression. Performance practices will be analyzed and active cognitive listening skills developed through guided listening to selected recordings. Crosslisted as: AFAM 250.

**MHIS 291. Topics in Music. 1-3 Hours.**

Semester course; variable hours. 1-3 credits per semester. May be repeated for a maximum of 6 credits. Flexible semester courses in selected aspects of music performance, theory, literature or history. See the Schedule of Classes for specific topics to be offered.

**MHIS 303. Piano Literature. 2 Hours.**

Semester courses; 2 lecture hours. 2, 2 credits. Prerequisite: open to music majors; all others must obtain permission of instructor. A survey of stringed keyboard literature. Historical, formal and stylistic considerations of the various periods and composers of keyboard music. Listening and reading assignments included. Fall semester: Baroque and Classical periods (1600-1828); spring semester: Romantic, Modern and Contemporary periods (1828-present).

**MHIS 304. Piano Literature. 2 Hours.**

Semester courses; 2 lecture hours. 2, 2 credits. Prerequisite: open to music majors; all others must obtain permission of instructor. A survey of stringed keyboard literature. Historical, formal and stylistic considerations of the various periods and composers of keyboard music. Listening and reading assignments included. Fall semester: Baroque and Classical periods (1600-1828); spring semester: Romantic, Modern and Contemporary periods (1828-present).

**MHIS 305. Form and Analysis I. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: MHIS 246. An analytical study of musical forms and salient features of melody, harmony, rhythm and timbre of late Baroque, Classical, early and late Romantic compositions.

**MHIS 306. Form and Analysis II. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: MHIS 246. Study of traditional and new approaches to form in the music of the 20th century. Examination of post-tonal harmony as a determinant of form, formal aspects of motivicism, contour, rhythm, register, timbre and texture.

**MHIS 307. The Physics of Sound and Music. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: A 100- or 200-level physics course or equivalent and the ability to read music or sing or play a musical instrument, or permission of instructor. Basics of the physics of waves and sound. Fourier synthesis, tone quality, human ear and voice, musical temperament and pitch, physics of musical instruments, electronic synthesizers, sound recording and reproduction, room and auditorium acoustics. Not applicable toward the physics major. Crosslisted as: PHYS 307.

**MHIS 311. Jazz Arranging I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MHIS 246 and APPM 272, or permission of instructor. A study of the basic harmonic, melodic, notational and orchestration techniques needed to draft a successful jazz arrangement. The final project will be to write an arrangement for a 12-piece jazz ensemble.

**MHIS 312. Jazz Arranging II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 311. Advanced harmonic, melodic and orchestration techniques applied to writing for the small jazz ensemble, vocal group and large jazz orchestra.

**MHIS 321. Music History I. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Enrollment restricted to music majors. Prerequisite: UNIV 200 or HONR 200. Study of Western music in a historical context from antiquity through the Classical era.

**MHIS 322. Music History II. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Enrollment restricted to music majors. Prerequisite: UNIV 200 or HONR 200. Study of Western music in a historical context from the Romantic era to the 21st century.

**MHIS 324. Jazz History. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 120. Study of jazz in a historical context from pre-jazz roots to contemporary styles.

**MHIS 350. Studies in the Music of the African Continent and Diaspora. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 6 credits. Prerequisite: MHIS 243 or MHIS/AFAM 250. An in-depth examination of selected topics and issues in African-derived musical and cultural traditions. See the Schedule of Classes for specific topics to be offered each semester. Crosslisted as: AFAM 350/INTL 370.

**MHIS 373. Beethoven and Brahms Symphonies. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: MHIS 305. An overview of all symphonies will be the basis for an in-depth analysis of selected movements.

**MHIS 380. Survey of the Music Industry. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Topics include copyright, business organization, music production, management, recording, freelancing, grants, taxation and careers allied with music.

**MHIS 382. Computers and Digital Recording. 3 Hours.**

Semester course; 2 lecture and 1 studio hours. 3 credits. Prerequisite: permission of chair. Open to arts majors. Lectures, and presentations on electronics, digital technology and acoustics as they relate to studio recording. Course covers the necessary knowledge and skills to work with software and other related audio-production equipment. Taught off campus at a nearby studio. Additional fee required.

**MHIS 392. Independent Study. 1-6 Hours.**

Semester courses; variable hours. 1-6 credits per semester. Maximum total of 6 credits. Determination of the amount of credit and permission of the instructor and department chair must be obtained prior to registration for the course. Open generally only to students of junior and senior standing who have individual interests in areas not otherwise available to the student.

**MHIS 405. Jazz Form and Analysis I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 312. Arranging and performance-practice techniques across selected jazz styles.

**MHIS 406. Jazz Form and Analysis II. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: MHIS 405 or 411. Continuing study of arranging and performance-practice techniques across selected jazz styles.

**MHIS 411. Jazz Arranging III. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Availability contingent upon student demand and faculty resources. Techniques of arranging for the contemporary pop medium.

**MHIS 412. Jazz Arranging IV. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 411. A study of the techniques used in modal, blues and other forms of contemporary jazz composition.

**MHIS 420. Chamber Music Literature Through 1800. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 321 or 322. Historical and analytical study of selected chamber music works from the 16th, 17th and 18th centuries.

**MHIS 421. Chamber Music Literature Since 1800. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 321 or 322. Historical and analytical study of selected chamber music works from the 19th, 20th and 21st centuries.



**MHIS 422. The History of the Symphony. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 321 or 322. Historical and analytical study of selected symphonies from the 17th, 18th, 19th and 20th centuries.

**MHIS 423. Tone Poems and Concert Overtures. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 321 or 322. Historical and analytical study of selected tone poems and concert overtures from the 18th, 19th, 20th and 21st centuries.

**MHIS 424. History of American Musical Theatre. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 321 or 322. Historical and analytical study of selected musical theatre productions from the 19th, 20th and 21st centuries.

**MHIS 425. Opera History. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 321 or 322. Historical and analytical study of selected operas from the 17th, 18th, 19th, 20th and 21st centuries.

**MHIS 465. Song Literature. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. A survey of the vocal literature of Germany, France, England and other countries.

**MHIS 474. Bach: Goldberg Variations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 246 or permission of instructor. A study in performance aspects and theoretical analysis of the Goldberg Variations by Johann Sebastian Bach. Writings on the topic, a printed score of the work and selected recordings will serve as the content for this study.

**MHIS 476. Duke Ellington. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. An overview of the music of Duke Ellington. Lectures and presentations on Ellington recordings, writings and sources of his influences will serve as content for overview.

**MHIS 491. Topics in Music. 1-3 Hours.**

Semester course; variable hours. 1-3 credits per semester. May be repeated for a maximum of 9 credits. Flexible semester courses in selected aspects of music performance, theory, literature or history. See the Schedule of Classes for specific topics to be offered each semester.

**MHIS 492. Independent Study. 1-6 Hours.**

Semester courses; variable hours. 1-6 credits per semester. Maximum total of 6 credits. Determination of the amount of credit and permission of the instructor and department chair must be obtained prior to registration for the course. Open generally only to students of junior and senior standing who have individual interests in areas not otherwise available to the student.

**Painting and Printmaking (PAPR)****PAPR 201. Painting From Observation. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. Introduction to the materials of oil and/or acrylic paint through a practice of painting from observation. Students will practice fundamental concepts in the medium and gain understanding of the context of contemporary and historic painting.

**PAPR 205. Painting, Basic. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 8 credits. An introduction to the use of paints with an emphasis on the organization of the artistic image, through the use of plastic form and color, coupled with analysis of historical and contemporary work.

**PAPR 209. Materials: Printmaking. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. An introduction to three principal printmaking techniques: etching, lithography and digital imaging.

**PAPR 210. Painting for Non-majors. 3 Hours.**

Semester course; 1 lecture and 6 studio hours. 3 credits. Open to non-art majors only. The course will offer an opportunity for students to work with some of the ideas and materials of painting through lecture and studio involvement.

**PAPR 211. Print Media I. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. Designed for students beginning to explore the development of their visual vocabulary utilizing the multiple. This course is meant to be taken as part of a year-long module including etching, lithography, screen printing and digital imaging.

**PAPR 221. Drawing, Basic. 3 Hours.**

Semester course; 9 studio hours. 3 credits. May be repeated for a maximum of 6 credits. Drawing instruction with attention to extension of the student's knowledge of the tools of drawing. Materials and techniques will be related to pictorial organization.

**PAPR 231. Drawing from Observation. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. This course continues the development of students' proficiencies in drawing through an emphasis on representation, illusion and mimesis. Students will gain an understanding of fundamental concepts in drawing, including figure/ground relationships, planes and volumes, and formal and expressive approaches to mark-making.

**PAPR 290. Concepts and Issues. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. A lecture course that familiarizes students with contemporary artworks, as well as modern and postmodern concepts. Students will be introduced to contemporary issues in art through the presentation of slides, films and visiting speakers. Visits to outside events and lectures will be required.

**PAPR 301. Painting Strategies. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: PAPR 201. This course will explore contemporary ideas in painting through studio practice, critique, lecture, reading and discussion. Students will be exposed to relevant contemporary theory and will pursue issues such as abstraction, installation, site specificity and process, as well as systemic and conceptual approaches to painting.

**PAPR 303. Painting, Intermediate. 3 Hours.**

Semester courses; 1 lecture and 6 studio hours. 3, 3 credits. Prerequisites: 3 credits of basic painting or permission of instructor. Primary emphasis on the development of an individual direction in the context of contemporary ideas and images in painting.

**PAPR 304. Paint Practice and Theory. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisites: PAPR 211, PAPR 231 and PAPR 301. This course utilizes the group critique as its principle teaching methodology and explores critical issues in the field of painting. Each student will pursue a studio practice, complete assigned reading and participate in discussion.



**PAPR 305. Painting, Intermediate. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 8 credits. Prerequisites: 4 credits of basic painting or permission of instructor. Primary emphasis on the development of an individual direction in the context of contemporary ideas and images in painting.

**PAPR 309. Electronic Strategies. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. A digital media course designed to acclimatize students with the use of computers in the context of fine art. As opposed to common perceptions of "computer art," students will learn to use the computer as they would any other tool – to articulate their ideas and add to their artistic practice. Through in-class exercises and homework assignments emphasizing problem-solving, students will learn to express their ideas through this emerging medium.

**PAPR 311. Print Media II. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisites: ARTF 131, ARTF 132, ARTF 133 and ARTF 134. Further studies for students exploring the development of their visual vocabulary utilizing the multiple. This course is meant to be taken as part of a year-long module including etching, lithography, screen printing and digital imaging.

**PAPR 314. Print Practice and Theory. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisites: PAPR 201, PAPR 211, PAPR 231, and PAPR 311. This course utilizes the group critique as its principle teaching methodology. It builds advanced printmaking skill and is a seminar on critical issues in the field. Each student will pursue a studio practice, complete assigned reading and participate in discussion.

**PAPR 315. Printmaking, Intermediate (Etching). 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 8 credits. Prerequisite: PAPR 209 or permission of instructor. Investigation of etching printmaking, drypoint, engraving, aquatint, soft grounds and related techniques.

**PAPR 317. Printmaking, Intermediate (Lithography). 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 8 credits. Prerequisite: PAPR 209 or permission of instructor. Investigation of techniques and technical printing problems in lithographic printing process from stones and plates.

**PAPR 319. Printmaking, Intermediate (Screenprinting). 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 8 credits. Prerequisite: PAPR 209 or permission of instructor. An investigation of cut, hand-drawn and photographic stencil techniques and printing on a variety of surfaces.

**PAPR 321. Drawing, Intermediate. 3 Hours.**

Semester course; 9 studio hours. 3 credits. May be repeated for a maximum of 6 credits. Prerequisites: UNIV 200 or HONR 200 and 3 credits of basic drawing, or permission of instructor. Drawing for advanced students with special emphasis on creative response to the drawing as a work of art.

**PAPR 324. Drawing, Intermediate. 3 Hours.**

Semester course; 9 studio hours. 3 credits. Prerequisites: 3 credits of basic drawing or permission of instructor. Drawing for intermediate students with emphasis on problematic thinking and dealing with drawing as an aesthetic form.

**PAPR 326. Color. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A course examining the concepts governing the use of color. Historical and contemporary concepts and methods of application will be explored.

**PAPR 329. Life Drawing. 3 Hours.**

Semester course; 6 studio hours. 3 credits. May be repeated for a maximum of 9 credits. Prerequisite: foundation drawing. Explores the structural and muscular systems of the human body with emphasis upon proportional relationships, chiaroscuro, contour, volume and foreshortening.

**PAPR 330. Figure Painting. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: PAPR 205 or permission of instructor. Designed to allow advanced painting students to work on a continuous basis with the life model in painting. The first half of the semester is focused on old master techniques and styles from earlier periods in art. The second half of the semester examines the work of contemporary figurative painters in the context of developing each student's individual approach to technique, style and content.

**PAPR 331. Experiments in Drawing. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: PAPR 231. Lecture, studio practice and historical context. Students will practice exploratory notions of drawing and be provided with relevant examples of contemporary approaches to drawing.

**PAPR 355. Drawing and Painting, Intermediate. 3 Hours.**

Semester course; 9 studio hours. 3, 3 credits. Prerequisites: 3 credits of basic drawing or painting or permission of instructor. Intermediate instruction in drawing and painting. Models, both nude and clothed, and still lifes are used.

**PAPR 356. Drawing and Painting, Intermediate. 3 Hours.**

Semester course; 9 studio hours. 3, 3 credits. Prerequisites: 3 credits of basic drawing or painting or permission of instructor. Intermediate instruction in drawing and painting. Models, both nude and clothed, and still lifes are used.

**PAPR 392. Independent Study in Painting and Printmaking. 1-4 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of six credits. Prerequisites: junior standing as a major in painting and printmaking and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

**PAPR 401. Painting Investigations. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: PAPR 301. With the emphasis on the exploration of an individual direction, this course continues the development of a student's technical and conceptual proficiencies in the context of contemporary painting practices.

**PAPR 402. Senior Degree Project. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: PAPR 304 or PAPR 314. In this course the student will pursue an independent studio practice toward the development of a personal and informed body of advanced work.

**PAPR 403. Painting, Advanced. 3 Hours.**

Semester courses; 1 lecture and 6 studio hours. 3, 3 credits. Prerequisites: 3 credits of intermediate painting or permission of instructor. More ambitious projects with the aim of developing in the senior student a highly professional approach and achievement in his or her work. Individual as well as group discussions.

**PAPR 404. Painting, Advanced. 3 Hours.**

Semester courses; 1 lecture and 6 studio hours. 3, 3 credits.  
Prerequisites: 3 credits of intermediate painting or permission of instructor. More ambitious projects with the aim of developing in the senior student a highly professional approach and achievement in his or her work. Individual as well as group discussions.

**PAPR 405. Painting, Advanced. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 20 credits. Prerequisites: 4 credits of intermediate printmaking or permission of instructor. More ambitious projects with the aim of developing in senior students a highly professional approach and achievement in their work. Individual as well as group discussions.

**PAPR 409. Large Format Digital Printing. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: PAPR 209. Engages students in the use of digital tools in printmaking. Students will investigate developments in digital culture in relation to print's history and future. Creative applications of digital tools, with an emphasis on the digital print, form the heart of this course.

**PAPR 412. Printmaking, Advanced (Lithography). 3 Hours.**

Semester course; 2 studio hours. 3 credits. Prerequisites: 3 credits of intermediate printmaking or permission of instructor. Specialization in one medium. Aesthetic suitability of the design to a particular medium is emphasized.

**PAPR 413. Printmaking, Advanced (Etching). 3 Hours.**

Semester course; 9 studio hours. 3 credits. Prerequisites: 3 credits of intermediate printmaking or permission of instructor. Concentration on one medium with emphasis on creative techniques.

**PAPR 415. Printmaking, Advanced (Etching). 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 20 credits. Prerequisites: 4 credits of intermediate printmaking or permission of instructor. Specialization in one medium with emphasis upon technical research and aesthetic suitability of the design to the particular medium used.

**PAPR 417. Printmaking, Advanced (Lithography). 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 20 credits. Prerequisites: 4 credits of intermediate printmaking or permission of instructor. Further investigation of techniques and technical printing problems in the lithographic printing process from stones and plates.

**PAPR 419. Printmaking, Advanced (Screenprinting). 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 20 credits. Prerequisites: 4 credits of intermediate printmaking or permission of instructor. Further exploration of cut, hand-drawn and photographic stencil techniques and printing on a variety of surfaces.

**PAPR 421. Drawing, Advanced. 3 Hours.**

Semester course; 9 studio hours. 3 credits. May be repeated for a maximum of 15 credits. Prerequisites: 3 credits of intermediate drawing or permission of instructor. A studio for drawing with individual criticism. Special attention is given to contemporary concepts.

**PAPR 423. Experimental Printmaking. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 8 credits. Prerequisites: 3 credits of intermediate printmaking or permission of instructor. Relief printing, collographs, monoprints, photoengraving and mixed media will be investigated.

**PAPR 431. Drawing and the Model. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisites: PAPR 331. Historical and contemporary figure drawing will be explored with an emphasis on developing the student's individual approach to the figure.

**PAPR 455. Drawing and Painting, Advanced. 3 Hours.**

Continuous courses; 9 studio hours. 3-3 credits. Prerequisites: 3 credits of intermediate drawing or painting or permission of instructor; completion of PAPR 455 to enroll in PAPR 456. Advanced instruction in drawing and painting. Models, both nude and clothed, and still lifes are used.

**PAPR 456. Drawing and Painting, Advanced. 3 Hours.**

Continuous courses; 9 studio hours. 3-3 credits. Prerequisites: 3 credits of intermediate drawing or painting or permission of instructor; completion of PAPR 455 to enroll in PAPR 456. Advanced instruction in drawing and painting. Models, both nude and clothed, and still lifes are used.

**PAPR 490. Senior Seminar. 2 Hours.**

Semester course; 3 lecture hours. 2 credits. Information to help graduating seniors in the department of painting and printmaking meet the professional requirements involved in exhibiting and promoting their creative work and in functioning as an artist. Writing intensive.

**PAPR 491. Topics in Painting and Printmaking. 1-4 Hours.**

Semester course; 1-4 credits. May be repeated with different topics for a maximum of 12 credits. Topical course focusing on creative expression and research in the areas of painting and printmaking. See the Schedule of Classes for specific topics to be offered.

**PAPR 492. Independent Study in Painting and Printmaking. 1-4 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of six credits. Prerequisites: senior status as a major in painting and printmaking and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

**Photography and Film (PHTO)****PHTO 201. Sophomore Photography Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: sophomore standing in Department of Photography and Film. Introduces various methods and means of exhibition.

**PHTO 202. Sophomore Film Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: sophomore standing in the Department of Photography and Film. Students will learn all aspects of organizing a film festival that will be held at the end of the spring semester.

**PHTO 233. Elements of the Moving Image. 4 Hours.**

Semester course; 4 lecture hours. 4 credits. A survey of new media and their origins. An exploration of this visual phenomena and its relationship to modern society.

**PHTO 243. Darkroom. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: sophomore standing in the department. Manual 35mm film camera is required. Study of fundamental camera techniques and photographic processes including darkroom printing. Emphasizes professional standards, technical proficiency and individual artistic expression.

**PHTO 245. Design Photography I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. For communication art and design majors only or permission of instructor. A comprehensive beginning class covering an introduction to the camera, the process of exposure, developing, and black-and-white printmaking.

**PHTO 260. Experiments in Sequencing. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 243 or PHTO 281. Explores the history, contexts and applications of sequencing as a unifying artistic practice. Emphasis is placed on sequencing as it relates to visual communication and contemporary multimedia.

**PHTO 275. Film as Material. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. Prerequisite: sophomore standing in the department. Study of the fundamental techniques and processes of 16mm film production, including cameras, lighting and composition. Emphasizes technical proficiency and individual artistic expression.

**PHTO 280. Moving Pixels. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: sophomore standing in the department. Introduction to digital video, computer imaging and interactive multimedia as tools of artistic expression and social inquiry.

**PHTO 281. Digital Imaging I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. Prerequisite: sophomore standing in the department. Digital still image camera is required. Study of fundamental techniques and processes of digital image-making, including image capture, manipulation and digital printing. Emphasizes professional standards, technical proficiency and individual artistic expression.

**PHTO 289. Filmmaking for Non-majors. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for a maximum of 6 credits. Digital motion picture camera is required. Study of fundamental techniques and processes of digital filmmaking, including image and audio recording, editing and exporting digital media. Emphasizes media as a tool of artistic expression and social inquiry.

**PHTO 290. Photography for Non-majors. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for a maximum of 6 credits. Digital still image camera is required. Study of fundamental techniques and processes of digital image-making, including image capture, manipulation and digital printing. Emphasizes professional standards, technical proficiency and individual artistic expression.

**PHTO 295. Revolutionary Cinema. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHTO 280. Investigates a range of experimental/underground/alternative moving image art forms and styles and covers key historical moments in the avant-garde. Emphasizes attentive viewing and critical analysis of works that challenge dominant media conventions.

**PHTO 301. Junior Seminar. 1 Hour.**

Semester course; 1 studio hour. 1 credit. Prerequisite: junior standing in the Department of Photography and Film. Instruction in how to make an artist website using current technology and 2-D design principles.

**PHTO 307. Processes and Techniques. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 243. Explores alternative photographic techniques with an emphasis on handmade printing. Places various photographic practices and aesthetics in a historical context. Students develop personal awareness of their creative process in the pursuit of a conceptually coherent body of work.

**PHTO 340. Lighting I: Studio. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: PHTO 243 and PHTO 281. Introduces controlled lighting for still photography in the studio. Students use continuous light sources and professional grade strobe equipment to explore tabletop and portraiture photography through lectures and studio assignments. Emphasizes professional standards, technical proficiency and individual artistic expression.

**PHTO 350. Concepts I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: UNIV 200 or HONR 200 and PHTO 281. Students utilize the aesthetic and technical skills mastered in previous courses to explore photography as a conceptual tool. Emphasizes both historic and contemporary contextualizations of the medium and fosters development of a long-term, personal artistic project.

**PHTO 351. Portrait Photography. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 345 Design Photography or PHTO 350 Intermediate Photography. Students explore the various visual possibilities of the use of portrait photography.

**PHTO 352. Concepts II: Junior Project. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. Prerequisite: PHTO 350. Students complete a conceptually coherent body of work that engages with photography as an artistic medium. Course emphasizes advanced understanding of historical perspectives and critical theory as they relate to the development of a personal project.

**PHTO 361. Sound and Color. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: PHTO 280 and PHTO 281. Explores advanced concepts and techniques in sound design, editing, color grading and postproduction workflow for film, video and multimedia.

**PHTO 377. The Film Image. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 9 credits. An examination of production techniques and problems encountered by the filmmaker in creating the motion picture image. A selected number of narrative, documentary, experimental and animated films are viewed as source material and dealt with from a production point of view. The films chosen for discussion vary from semester to semester.

**PHTO 381. Digital Imaging II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 281. Digital still image camera is required. Study of advanced techniques and processes of digital image-making, including advanced manipulation and color control and advanced digital printing. Emphasizes professional standards, technical proficiency and individual artistic expression.

**PHTO 382. Advanced Digital Printing. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: PHTO 380 and 381. How to manage a digital color workflow in order to produce desired colors and tonal values in the final output – the print. Instruction in controlling image management, color calibration and printing through lectures, demonstration and hands-on experience. Discussion of student work in regular critiques.

**PHTO 390. Writing for the Screen. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Explores basic theory and formal aspects of story, structure and character through readings, workshops and writing exercises. Students develop skills specific to writing and pre-producing a short fiction, documentary or experimental film.

**PHTO 391. Topics in Photography and Film. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated with different topics for a maximum of 6 credits. A lecture and/or studio course offered on a variety of photography or film issues. See the Schedule of Classes for specific topics covered each semester.

**PHTO 392. Animation. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Explores various materials and processes, analog and digital, involved in creating animated moving image works. Emphasizes studio technique and artistic exploration.

**PHTO 394. Documentary I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 390. Introduces strategies for developing, shooting and editing various types of documentary and nonfiction media including, but not limited to, the electronic essay, biography/portraiture, ethnographic film and new genres. Covers key historical moments and ethical issues related to the representation of the real world.

**PHTO 420. Senior Thesis I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: senior standing in the department. Critical analysis and development of a yearlong creative thesis project with emphasis on the completion of a conceptually coherent body of work. Course emphasizes professional standards, technical proficiency and individual artistic expression informed by historical perspectives and critical theory.

**PHTO 421. Senior Thesis II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 420. Critical analysis and development of a yearlong creative thesis project with emphasis on the completion of a conceptually coherent body of work. Course emphasizes professional standards, technical mastery and individual artistic expression informed by historical perspectives and theory. This course is a capstone experience integrating effective oral, written and visual communication, critical thinking and advanced studio techniques.

**PHTO 435. Professional Practice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines a range of business models, practices and tools applicable to building a career in photography and related artistic, commercial and media fields. Emphasizes practical skills, marketing, legal and ethical issues.

**PHTO 436. Senior Suitcase. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines a range of professional practices and tools applicable to building a career in the media arts. Students develop ancillary materials related to their overall student film portfolio. Emphasizes practical skills, marketing and audience-engagement issues.

**PHTO 442. Lighting II: Location. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 340. Explores photography using lighting design on location. Students concentrate on balancing and matching available lighting with electronic flash and continuous lighting tools. Emphasis is on the technical, professional and logistical skills required of a photographer working on location assignments and on using creative approaches to lighting and image design.

**PHTO 474. Contemporary Critical Perspectives. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHTO 352. Explores and interrogates multiple theories of representation and the aesthetic, ideological, ethical and cultural issues raised by contemporary photography and related media. Students will view work, read contemporary criticism, engage in discussion and produce original, critical writing.

**PHTO 475. Advanced Production Workshop. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 390. A practical, intensive workshop in which students work collaboratively in standard industry crew positions to complete a single project. Students explore craft, aesthetics, storytelling and production issues at an advanced level.

**PHTO 484. Thesis Film I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 475. Students complete writing, previsualization, preproduction and initial production on their thesis films. Students engage in workshops, screenings and critiques in order to further develop their professional identities and to advance their understanding of the methods and tools deployed by independent film and media artists.

**PHTO 485. Thesis Film II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 484. Students complete all production, editing, sound design and outreach materials for their thesis films. Students engage in workshops, screenings and critiques in order to further develop their professional identities and to advance their understanding of the methods and tools deployed by independent film and media artists. This course is a capstone experience integrating effective oral, written and visual communication, critical thinking and advanced studio techniques.

**PHTO 491. Topics in Photography and Film. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. May be repeated with different topics for a maximum of 12 credits. A seminar or workshop that intensively engages photography, film and related-media subjects, including, but not limited to, a range of historical and contemporary photographic/cinematic practices, trends, theories and concerns within a wider artistic and art historical context. See the Schedule of Classes for specific topics covered each semester.

**PHTO 492. Independent Study in Photography and Film. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of 6 credits. Prerequisites: junior or senior standing as a major in photography and film, and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.



**PHTO 493. Teaching Practicum in Photography and Film. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. Repeatable for a maximum of 6 credits. Prerequisites: senior standing in the department and a minimum GPA of 3.0. Advanced students in photography and film are mentored in the classroom while serving as teaching apprentices. Specific duties are negotiated between the student and the mentor and approved by the department chair. Duties will typically include regular classroom attendance, peer tutoring and assistance in technical demonstrations of equipment and/or software.

**PHTO 494. Documentary II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 394. Students will explore advanced concepts and techniques in documentary and nonfiction media creation through in-class exercises, screenings, independent productions and group critiques.

**PHTO 495. Photography and Film Internship. 3 Hours.**

Semester course; 10 hours per week for a total of 150 hours of professional work experience. 3 credits. May be repeated. Prerequisite: consent of internship supervisor and academic adviser. Practical work experiences are coordinated with professionals in the field of photography, film and related media.

**Sculpture and Extended Media (SCPT)****SCPT 209. Introduction to Sculpture. 3 Hours.**

Semester courses; 2 lecture and 3 studio hours. 3, 3 credits. Open to non-art majors only. The course will offer an opportunity for students to work with some of the ideas and materials of sculpture through slides, lecture and studio involvement.

**SCPT 210. Introduction to Sculpture. 3 Hours.**

Semester courses; 2 lecture and 3 studio hours. 3, 3 credits. Open to non-art majors only. The course will offer an opportunity for students to work with some of the ideas and materials of sculpture through slides, lecture and studio involvement.

**SCPT 211. Basic Sculpture I. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. The primary goal of this course is the effective expression of ideas. The student is introduced to the basic tools, materials and techniques with attention given to problem-solving.

**SCPT 212. Basic Sculpture II. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: SCPT 211. The primary goal of this course is the effective expression of ideas. The student uses advanced techniques that build upon the basic skills taught in Basic Sculpture I with attention given to problem-solving.

**SCPT 215. Sophomore Seminar. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Open only to sculpture majors. Designed for sophomore sculpture majors as a supplement to studio courses in the department. Emphasis is placed on articulating and expanding upon individual interests in relation to studio practices.

**SCPT 217. Sculptural Concepts. 4 Hours.**

Semester courses; 3 lecture and 3 studio hours. 4, 4 credits. Prerequisite: permission of instructor. A study of contemporary technology, philosophy, criticism and their relation to material resources and technical practices.

**SCPT 218. Sculptural Concepts. 4 Hours.**

Semester courses; 3 lecture and 3 studio hours. 4, 4 credits. Prerequisite: permission of instructor. A study of contemporary technology, philosophy, criticism and their relation to material resources and technical practices.

**SCPT 290. Concepts and Issues. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: completion of Art Foundation. A lecture course that familiarizes students with contemporary artworks, as well as modern and postmodern concepts. This class presents contemporary issues in art through the presentation of media and visiting speakers. Visits to outside events and lectures will be required.

**SCPT 311. Intermediate Sculpture. 4 Hours.**

Semester courses; 3 lecture and 6 studio hours. 4, 4 credits. May be repeated for a maximum of 8 credits. Prerequisite: SCPT 212. The emphasis in this course is on creative independence. The student is encouraged to utilize a variety of materials in order to express his ideas.

**SCPT 312. Intermediate Sculpture. 4 Hours.**

Semester courses; 3 lecture and 6 studio hours. 4, 4 credits. May be repeated for a maximum of 8 credits. Prerequisite: SCPT 212. The emphasis in this course is on creative independence. The student is encouraged to utilize a variety of materials in order to express his ideas.

**SCPT 313. Dimensional Concepts. 4 Hours.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. An opportunity for the sculpture student to extend and expand upon traditional methods of expression and to explore new areas.

**SCPT 314. Dimensional Concepts. 4 Hours.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. An opportunity for the sculpture student to extend and expand upon traditional methods of expression and to explore new areas.

**SCPT 321. Figure Modeling. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: completion of Art Foundation. This course provides instruction in fundamental figure modeling skills working with clay and from live models.

**SCPT 322. Flexible Molds. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: completion of Art Foundation. This course provides instruction on a variety of moldmaking techniques, including plaster and flexible moldmaking materials.

**SCPT 323. Foundry. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: SCPT 322. This course provides instruction in bronze and aluminum metal casting using the lost wax process, ceramic shell.

**SCPT 324. Robotics for Sculpture. 4 Hours.**

Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisite: completion of Art Foundation. This course provides instruction in the construction, programming and integration of microcontrollers in conjunction with the use of switches, motors and other devices.

**SCPT 411. Advanced Sculpture. 4 Hours.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. May be repeated for a maximum of 16 credits. Prerequisite: SCPT 212. The majority of the student's activities occur in the studio with emphasis on the development of a personal style.

**SCPT 412. Advanced Sculpture. 4 Hours.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. May be repeated for a maximum of 16 credits. Prerequisite: SCPT 212. The majority of the student's activities occur in the studio with emphasis on the development of a personal style.



**SCPT 413. Dimensional Concepts. 4 Hours.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. An opportunity for the sculpture student to extend and expand upon traditional methods of expression and to explore new areas.

**SCPT 414. Dimensional Concepts. 4 Hours.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. An opportunity for the sculpture student to extend and expand upon traditional methods of expression and to explore new areas.

**SCPT 415. Senior Seminar. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Open only to sculpture majors. Designed for graduating sculpture students. Focus is on professional development and preparation for the possibility of graduate school.

**SCPT 417. Seminar in Contemporary Sculpture. 4 Hours.**

Semester course; 4 lecture hours. 4 credits. May be repeated for a maximum of 12 credits. Prerequisite: SCPT 212. A forum for consideration and discussion of recent developments.

**SCPT 419. Professional Studio Practicum. 3 Hours.**

Semester course; 9 studio hours. 3 credits. May be repeated for a total of 6 credits. Enrollment requires permission of departmental chair. A studio class that provides a continuation of the student's work in sculpture. This course will be recorded as an elective for a sculpture major.

**SCPT 480. Critical Issues. 4 Hours.**

Semester course; 4 lecture hours. 4 credits. Prerequisite: completion of Art Foundation. This advanced course examines diverse critical and aesthetic issues through the study of a select group of highly innovative international artists.

**SCPT 491. Topics in Sculpture. 1-4 Hours.**

Semester course; 1-4 credits. May be repeated for a maximum of 16 credits. Prerequisite: permission of instructor. A seminar or workshop on a selected issue or topic in the field of sculpture. See the Schedule of Classes for specific topics to be offered each semester.

**SCPT 492. Independent Study in Sculpture. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. May be repeated for a maximum total of 8 credits. Prerequisites: senior standing as a major in sculpture and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

**SCPT 493. Sculpture Internship. 1-6 Hours.**

Semester course; 40 contact hours per credit. 1-6 credits. May be repeated for a maximum of 12 credits. Prerequisite: SCPT 311 or SCPT 312. Open to junior- and senior-level sculpture majors only. A practicum in which students work with professionals in the field.

**Speech (SPCH)****SPCH 121. Effective Speech. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Structured speaking and critical listening experiences within the basic forms of speech communication: interpersonal, small group and public.

**SPCH 321. Speech for Business and the Professions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Theory and practice in the oral communication process. Organization and presentation of informative and persuasive subject matter in professional contexts related to the student's major area of interest.

**Theatre (THEA)****THEA 100. Technical Production for Performers. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. A crew assignment for a Mainstage production fulfilling all required work and hours of production calls. Course restricted to theatre majors.

**THEA 103. Stagecraft. 3 Hours.**

Semester course; 9 studio hours. 3 credits. Restricted to theatre majors. The fundamental methods, materials and techniques of set construction for the stage. Participation in departmental productions.

**THEA 104. Costume Construction. 3 Hours.**

Semester course; 9 studio hours. 3 credits. Restricted to theatre majors. The fundamental methods, materials and techniques of costume construction for the stage. Participation in departmental productions.

**THEA 105. Advanced Costume Construction. 3 Hours.**

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 104. Focuses on the development of skills needed to function as a stitcher in a theatrical costume shop through practical application of techniques and processes.

**THEA 107. Introduction to Stage Performance. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. For non-theatre majors. A survey and application of the basic elements in stage performing; acting, scene study, voice and movement.

**THEA 108. Introduction to Stage Performance. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. For non-theatre majors. A survey and application of the basic elements in stage performing; acting, scene study, voice and movement.

**THEA 113. Introduction to Acting I. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon satisfactory audition. An introduction to and exploration of performance skills through theatre games, role-playing, improvisation and work on basic script units.

**THEA 114. Introduction to Acting II. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon satisfactory audition. Study of the basic Stanislavski System and practicing toward competency of applying this system to monologue and scene study.

**THEA 121. Introduction to Drawing. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Open only to theatre majors. An introduction to drawing skills. Topics include line quality and contour, volume, value with shading and crosshatching, texture, space and composition, perspective, gesture, and figure drawing.

**THEA 122. Color Theory. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Open only to theatre majors. An introduction to color theory. Topics covered include how to create different values, hues and intensities, and how to mix color to best express a specific artistic intent.

**THEA 161. Figure Drawing: Superficial Anatomy. 2 Hours.**

Semester course; 1 lecture and 4 studio hours. 2 credits. Introductory course focused on developing drawings from direct observations of the figure. The specific problem will be the study of superficial anatomy as related to costume design. Various drawing and painting media will be explored.

**THEA 162. Figure Drawing: Draping the Human Form. 2 Hours.**

Semester course; 1 lecture and 4 studio hours. 2 credits. Focus on developing drawings from direct observations of the figure and folds, students will show the surface influence of superficial anatomy on the draped figure. Various drawing and painting media will be explored.

**THEA 201. Voice and Speech for the Actor I. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon satisfactory audition. A study of the basic elements of voice and speech for actors.

**THEA 202. Voice and Speech for the Actor II. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Continuing study elements of voice and speech and practicing toward competency of applying these skills to text.

**THEA 203. Movement for the Actor I. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon satisfactory audition. Practice and study of stage movement for the purpose of creating truthful physical behavior in the theatre.

**THEA 204. Movement for the Actor II. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Continuing study of creating truthful physical behavior in the theatre, leading toward competency of applying same to characters and text.

**THEA 211. Introduction to Drama. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Analysis and critical examination of plays for methods of interpretation and production qualities.

**THEA 212. Introduction to Drama II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Analysis and critical examination of plays for methods of interpretation and production qualities.

**THEA 213. Acting I. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon satisfactory audition. Exploration of the Stanislavski System with particular emphasis on emotional availability, point of view and personalization techniques.

**THEA 214. Acting II. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Prerequisite: THEA 213. Open only to theatre majors upon satisfactory audition. Study of point of view with personalization and emotional availability and practicing toward competency of applying these techniques to monologue and scene study culminating in the sophomore assessment audition.

**THEA 217. Theatrical Drafting. 2 Hours.**

Semester course; 1 lecture and 4 studio hours. 2 credits. An introduction to the practices and procedures used in communicating technical and design information among a range of theatre practitioners. Focus on traditional hand-drafting techniques.

**THEA 218. Introduction to Scene Painting. 3 Hours.**

Semester course; 1 lecture and 4 studio hours. 3 credits. An introduction to fundamental scene painting technique. Students will have the opportunity to study the materials and techniques of scene painting as well as the practices and expectations of a career in scenic artistry.

**THEA 219. Fundamentals of Entertainment Technology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduction to the physical science underlying various disciplines of technical theatre.

**THEA 221. Introduction to Scene Design. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Restricted to theatre majors. An introduction to the theories, practices and procedures of designing for the stage.

**THEA 223. Practicum in Theatre Technology. 3 Hours.**

Semester courses; 9 studio hours. 3, 3 credits. Prerequisites: THEA 103 and THEA 104. Restricted to theatre majors. Advanced study in theatre technologies and the materials and methodologies of stage construction.

**THEA 224. Practicum in Theatre Technology. 3 Hours.**

Semester courses; 9 studio hours. 3, 3 credits. Prerequisites: THEA 103 and THEA 104. Restricted to theatre majors. Advanced study in theatre technologies and the materials and methodologies of stage construction.

**THEA 225. Electricity for the Stage. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Restricted to theatre majors. A study of the properties and basic principles of electricity as they relate to the utilization of light on the stage. Participation in departmental productions.

**THEA 227. Introduction to Theatrical Makeup. 3 Hours.**

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: THEA 104 or permission of instructor. Teaches basic makeup practices for theatrical work. Students will gain an introductory knowledge of the physiological structure of the human face and how to alter appearance of an actor through the use of stage-makeup and basic prosthetic appliances. These skills will be evaluated through practical applications and studio work.

**THEA 228. Introduction to Costume Design. 3 Hours.**

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: THEA 227 or permission of instructor. Introduces students to the costume design process including: the techniques of drawing to aid in facilitating costume design, paperwork required of the costume designer, and costume sketching and painting techniques. Students will employ critical thinking in their evaluation of the costume design process and concurrently be introduced to the skills required in the design process through practical design projects.

**THEA 229. Introduction to Lighting Design. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Restricted to theatre majors. A study of issues concerning the properties of light and electricity as they relate to theatre including design, composition and color.

**THEA 237. Advanced Lighting I. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 229. An in-depth exploration into development and execution of a lighting design and the lighting potentials of a wide variety of facilities, production styles and lighting equipment. Includes work on development of communication skills with directors via value sketches and lighting plots. Work will include studies and design research, concepts, collaboration, professional procedures and systems, paperwork, and organization. Varies scales of theoretical and practical projects in the light lab.

**THEA 251. Rehearsal and Performance I. 1-3 Hours.**

Semester course; 2, 4 or 6 studio hours. 1, 2 or 3 credits. May be repeated for a maximum total of 6 credits. Restricted to theatre majors. Work in acting, management, design or technical areas within a TheatreVCU production.

**THEA 252. Rehearsal and Performance II. 1-3 Hours.**

Semester course; 2, 4 or 6 studio hours. 1, 2 or 3 credits. May be repeated for a maximum total of 6 credits. Restricted to theatre majors. Work in acting, management, design or technical areas within a TheatreVCU production.

**THEA 261. Figure Drawing: Media and Technique. 2 Hours.**

Semester course; 1 lecture and 4 studio hours. 2 credits. This course will explore various traditional wet and dry media techniques in depicting representational costume design. Assignments will incorporate applicable references to art history.

**THEA 262. Figure Drawing: Advanced Media and Technique. 2 Hours.**

Semester course; 1 lecture and 4 studio hours. 2 credits. Prerequisite: THEA 261. An advanced course investigating various traditional wet and dry media techniques depicting the human form and costuming. Assignments will incorporate applicable references to the history of art and contemporary developments.

**THEA 292. Independent Study in Theatre. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of six credits. Prerequisites: sophomore standing as a major in theatre and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

**THEA 301. Advanced Voice and Speech for the Actor I. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Prerequisite: THEA 202. Open only to theatre majors upon satisfactory audition. Building upon lessons and skills practiced in the prerequisite course, an introduction to advanced elements of voice and speech and practicing toward competency of applying these skills to text.

**THEA 302. Advanced Voice and Speech for the Actor II. 3 Hours.**

Semester course; 3 studio hours. 3 credits. Prerequisite: THEA 301 with a minimum grade of B. Building upon lessons and skills practiced in the prerequisite, continuing study in advanced elements of voice and speech and practicing toward competency of applying these skills to text.

**THEA 303. Black Theatre. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the major developments in the evolution of black theatre through readings and studio performances in black-related and black theatre dramaturgy. Crosslisted as: AFAM 303.

**THEA 305. Advanced Scenic Design I. 3 Hours.**

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 221. Open only to theatre majors. A study of the techniques and methods of scene design.

**THEA 306. Advanced Scenic Design II. 3 Hours.**

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 221. Open only to theatre majors. Advanced study of the techniques and methods of scene design.

**THEA 307. History of the Theatre. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisites: UNIV 200 or HONR 200; completion of THEA 307 to enroll in THEA 308. Restricted to theatre majors. A study and analysis of theatre history: the architecture, the performer and performances, the stage, the production methods and the audience.

**THEA 308. History of the Theatre. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisites: UNIV 200 or HONR 200; completion of THEA 307 to enroll in THEA 308. Restricted to theatre majors. A study and analysis of theatre history: the architecture, the performer and performances, the stage, the production methods and the audience.

**THEA 309. History of Costumes. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Illustrated lectures on the history of clothing from primitive times to the present.

**THEA 310. History of Costumes. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Illustrated lectures on the history of clothing from primitive times to the present.

**THEA 311. Advanced Movement for the Actor I. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon completion of satisfactory audition. Advanced study of movement for the actor emphasizing physical control, flexibility and various physical performance techniques.

**THEA 312. Advanced Movement for the Actor II. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Prerequisite: THEA 311 with a minimum grade of B. Building on the lessons of the prerequisite, continuing practice of movement skills toward proficiency in creating truthful physical behavior in the theatre.

**THEA 313. Actor's Studio I. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon completion of satisfactory audition. Scene study and exploration of personalized character work as it applies to modern acting.

**THEA 314. Actor's Studio II. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Prerequisite: THEA 313 with a minimum grade of B. Building on the lessons of the prerequisite, continuing exploration of personalized character work as it applies to modern acting.

**THEA 315. Audition Technique. 3 Hours.**

Semester course; 1 lecture and 4 studio hours. 3 credits. Prerequisites: minimum grade of B in THEA 313. Open only to theatre majors upon completion of a satisfactory audition or with permission of instructor. Concentrated work using various techniques and methods of auditioning for the stage, television and film.

**THEA 317. Musical Theatre Performance I. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Open only to theatre majors upon completion of a satisfactory audition. Development of skills necessary to prepare songs and roles in musical theatre productions.

**THEA 318. Musical Theatre Performance II. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Prerequisite: THEA 317. Open only to theatre majors upon completion of a satisfactory audition. Continuation of the development of skills necessary to prepare songs and roles in musical productions while also developing skills in audition technique and the building of a personal repertoire.

**THEA 320. Structural Design for the Stage. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduction to basic structural analysis as applies to theatrical scenic construction and rigging.

**THEA 321. Costume Design Studio I. 3 Hours.**

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: permission of instructor. A studio course exploring the practice of the creative techniques, skill-building tools and business processes used according to the practical standards of the industry developed by professional union costume designers.

**THEA 322. Costume Design Studio II. 3 Hours.**

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: permission of instructor. Continuing studio course exploring the practice of the creative techniques, skill-building tools and business processes used according to the practical standards of the industry developed by professional union costume designers.

**THEA 323. Practicum in Advanced Theatre Technology. 3 Hours.**

Semester course; 9 studio hours. 3 credits. May be repeated for a maximum of 9 credits. Restricted to theatre majors. Advanced study in theatre technologies and technical management.

**THEA 324. Practicum in Stage Lighting. 3 Hours.**

Semester course; 9 studio hours. 3 credits. May be repeated for a maximum of 12 credits. Restricted to theatre majors. Practical application in the methodologies of stage lighting.

**THEA 325. Stage Management Practicum. 3 Hours.**

Semester course; 2 lecture and 2 studio hours. 3 credits. May be repeated for a maximum of 18 credits. Prerequisite: permission of instructor. The fundamental responsibilities and techniques of professional stage management at the assistant stage management level. Graded as pass/fail.

**THEA 326. Audio Mixing for Theatre. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. May be repeated for a maximum total of 9 credits. A study of audio mixing and the practical application of these practices for live theatrical productions.

**THEA 327. Computer-assisted Design and Drafting for the Theatre. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 6 credits. Instruction and practice in the use of computer assisted design and drafting for the theatre such as preparation and presentation, perspective, rotation, development and graphic solutions pertaining to theatrical construction problems.

**THEA 329. Patternmaking for the Theatre. 3 Hours.**

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: THEA 105. This course introduces basic patternmaking skills including: sloper development, pattern manipulations employing flat patterning techniques, drafting, scaling and copying of historic garments. This course introduces critical-thinking skills as related to the form, fit and composition of clothing as it relates to the body. Students will apply these skills to practical projects that can relate to a variety of historical period costumes.

**THEA 330. Production. 3,6 Hours.**

Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. Open only to theatre majors. The design, rehearsal and performance of dramatic works.

**THEA 331. Production. 3,6 Hours.**

Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. Open only to theatre majors. The design, rehearsal and performance of dramatic works.

**THEA 332. Draping for the Theatre. 3 Hours.**

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: THEA 329. This course introduces basic draping skills including: sloper development, princess-line and bias garments, and clothing draped over extensive understructures. This course practices critical-thinking skills as related to the form, fit and composition of clothing as it relates to the body. Students will apply these skills to demonstrate specific historical period costumes.

**THEA 333. Sound Design Technology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduction to basic concepts, equipment and software needed to create and reinforce sound imagery.

**THEA 334. Sound Design I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Exploration in contemporary practices in sound design for the theatre.

**THEA 336. Introduction to Costume Crafts. 3 Hours.**

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: THEA 227. The course will introduce the student to a variety of skills and application methods that are needed for the execution of costume designs in a theatrical production. An overview and basic understanding of these crafts will be explored and practiced during the semester.

**THEA 337. Advanced Lighting Design II. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 237 with a minimum grade of C. Advanced study of lighting design, incorporating increasingly difficult texts, rep plots, facilities and production styles. Further exploration of the process of lighting design for theatre and other related events. Projects focus intensely on communication and the collaborative process.

**THEA 340. Theatre Projects. 3,6 Hours.**

Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. Open only to theatre majors. Individual or group projects in acting, directing, costume design, stage design or dramaturgy.

**THEA 341. Theatre Projects. 3,6 Hours.**

Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. Open only to theatre majors. Individual or group projects in acting, directing, costume design, stage design or dramaturgy.

**THEA 351. Rehearsal and Performance. 1-3 Hours.**

Semester courses; 2, 4 or 6 studio hours. 1, 2 or 3 credits. Restricted to theatre majors. Work in acting, management, design or technical areas within a TheatreVCU production.

**THEA 352. Rehearsal and Performance. 1-3 Hours.**

Semester courses; 2, 4 or 6 studio hours. 1, 2 or 3 credits. Restricted to theatre majors. Work in acting, management, design or technical areas within a TheatreVCU production.

**THEA 361. Directing I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Open only to theatre majors. Introduction to and practice in the theories of stage direction.

**THEA 362. Directing II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: THEA 361. Continuing practice in solving problems involved in the production of period plays and a study of modern theories.

**THEA 371. Mechanical Design for the Stage. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduction to the process for, components of and applications for mechanical design for stage.

**THEA 372. Control Systems for Entertainment. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduction to current and emerging control systems used in lighting, sound, stage machinery and show control.

**THEA 373. Photo Manipulation for Theatre. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduction to the basic concepts and practices of creating computer-manipulated photo images and documents.



**THEA 392. Independent Study in Theatre. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of 6 credits. Prerequisites: junior standing as a major in theatre and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

**THEA 403. History of Dramatic Literature. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Restricted to theatre majors. Study and analysis of dramatic literature. First semester: Aeschylus through Shakespeare. Second semester: Corneille to Ibsen.

**THEA 404. History of Dramatic Literature. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Restricted to theatre majors. Study and analysis of dramatic literature. First semester: Aeschylus through Shakespeare. Second semester: Corneille to Ibsen.

**THEA 407. Advanced Scenic Technique. 3 Hours.**

Semester course; 1 lecture and 4 studio hours. 3 credits. Prerequisites: THEA 221 and permission of instructor. An intensive involvement in contemporary theory and practice of scenic techniques. Participation in departmental productions.

**THEA 408. Advanced Scene Painting. 3 Hours.**

Semester course; 1 lecture and 4 studio hours. 3 credits. Repeatable for a maximum of 12 credits. Practice of fundamental scene painting technique. Students will have the opportunity to study the materials and advanced techniques of scene painting, as well as the practices and expectations of a career in scenic artistry.

**THEA 412. Acting for Camera. 3 Hours.**

Semester course; 1 lecture and 4 studio hours. 3 credits. Prerequisite: THEA 314 with a minimum grade of B. Open only to theatre majors upon completion of a satisfactory audition or with permission of instructor. Students will learn techniques for approaching acting problems associated with performance in front of a camera.

**THEA 413. Actor's Studio II. 3 Hours.**

Semester course; 1 lecture and 4 studio hours. 3 credits. Prerequisites: minimum grade of B in THEA 314. Open only to theatre majors upon completion of satisfactory audition or with permission of instructor. Students will learn techniques for approaching specific acting problems associated with the performance of various classical acting styles.

**THEA 415. The Business of Theatre. 4 Hours.**

Semester course; 4 lecture hours. 4 credits. Open only to theatre majors upon completion of a satisfactory audition or with permission of instructor. An analysis and survey of beginning and maintaining a successful professional career in theatre, television and film, including information about contracts, unions, agents/managers, casting directors, taxes and other life strategies in order to develop a specific plan for the next steps after graduation.

**THEA 416. Solo Performance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: THEA 314 with a minimum grade of B. Open only to theatre majors upon completion of a satisfactory audition or with permission of instructor. An exploration of story and personal journey. Students will explore and interrogate a diverse range of solo-performance styles culminating in a solo performance of a "work-in-progress" of between 15 and 30 minutes presented to an audience.

**THEA 421. Advanced Costume Design Studio I. 3 Hours.**

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisites: THEA 321 and 322. Advanced studio course exploring the practice of the creative techniques and the practical standards of the industry developed by professional union costume designers.

**THEA 422. Advanced Costume Design Studio II. 3 Hours.**

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisites: THEA 321 and 322. Advanced studio course exploring the practice of the creative techniques and business processes used according to the practical standards of the industry developed by professional union costume designers. During the semester students will create a digital interview-quality portfolio.

**THEA 423. Modern Drama. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Restricted to theatre majors. Intensive study of major continental and American plays.

**THEA 424. Modern Drama. 3 Hours.**

Semester courses; 3 lecture hours. 3, 3 credits. Restricted to theatre majors. Intensive study of major continental and American plays.

**THEA 426. Advanced Dramatic Writing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated once for credit. Prerequisite: ENGL 305, 317 or comparable drama course, or permission of instructor. A practical approach to the creation of original scripts for theatre and film. Crosslisted as: ENGL 433.

**THEA 430. Production. 3,6 Hours.**

Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. Open only to theatre majors. The design, rehearsal and performance of dramatic works.

**THEA 431. Production. 3,6 Hours.**

Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. Open only to theatre majors. The design, rehearsal and performance of dramatic works.

**THEA 432. Stage Management: Music Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: THEA 325 with a minimum grade of B. Open only to theatre majors. An in-depth analysis of music theory as it pertains to the opera and musical theatre fields.

**THEA 433. Stage Management: Musical Theatre and Opera. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: THEA 325 with a minimum grade of B. Open only to theatre majors. An in-depth analysis of the specific techniques required to successfully stage-manage musical theatre and opera.

**THEA 434. Stage Management: Maintaining and Remounting Productions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: THEA 325 with a minimum grade of B. Open only to theatre majors. An in-depth analysis of the advanced techniques in stage management required to successfully maintain a long-running show and remount a previously realized production.

**THEA 435. The Business of Stage Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: THEA 325 with a minimum grade of B. Open only to theatre majors. An analysis of the techniques necessary for a successful career as a stage manager, studying resumes, interview skills, unions and other areas.



**THEA 437. Advanced Lighting Design III. 3 Hours.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 337 with a minimum grade of C. Course incorporates increasingly difficult texts, facilities and production styles and alternative venue and production styles, such as landscape lighting and concert. Use of industry standard technology and 3-D rendering is a focus in the class.

**THEA 439. Advanced Patterning Techniques I. 3 Hours.**

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisites: THEA 329 and 332. Garment patterning based on various historic periods. Projects emphasize creative solutions to patterning problems employing critical thinking. Skills learned in prerequisite courses will be practiced, developing competency as related to achieving fit, form and function of period garments within the limitations of a given design.

**THEA 440. Theatre Projects. 3,6 Hours.**

Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. Open only to theatre majors. Individual or group projects in acting, directing, costume design, stage design or dramaturgy.

**THEA 441. Theatre Projects. 3,6 Hours.**

Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. Open only to theatre majors. Individual or group projects in acting, directing, costume design, stage design or dramaturgy.

**THEA 442. Advanced Patterning Techniques II. 3 Hours.**

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 439. Garment patterning based on various historic periods. Projects emphasize creative solutions to patterning problems employing critical thinking. Skills learned in prerequisite course will be practiced and built upon, developing complex understructures for period clothing while practicing competency in patterning and building the period garments, which complement the fit, form and function of these period garments.

**THEA 451. Rehearsal and Performance. 1-3 Hours.**

Semester courses; 2, 4 or 6 studio hours. 1, 2 or 3 credits. Restricted to theatre majors. Work in acting, management, design or technical areas within a TheatreVCU production.

**THEA 452. Rehearsal and Performance. 1-3 Hours.**

Semester courses; 2, 4 or 6 studio hours. 1, 2 or 3 credits. Restricted to theatre majors. Work in acting, management, design or technical areas within a TheatreVCU production.

**THEA 469. Advanced Patterning Techniques III. 3 Hours.**

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 442. Advanced patterning techniques centered on tailoring for students who have completed flat patterning and draping classes. This class explores modern and historical methods of tailoring; lining and finishing are emphasized for stage and costume use. The course assesses the student's competency in skills taught in previous course work.

**THEA 470. Advanced Patterning Techniques IV. 3 Hours.**

Semester course; 1 lecture and 3 studio hours. 3 credits. Prerequisite: THEA 469. Exploration of costume patterning with an emphasis on period patterning in a production setting, assessing the basic and advanced knowledge of draping and flatpatterning. This course provides students with intense production projects on VCU Mainstage productions synthesizing all aspects of patterning.

**THEA 491. Topics in Theatre. 1-3 Hours.**

Semester course; variable hours. 1-3 credits per semester. May be repeated for a maximum of 9 credits. Restricted to theatre majors. Flexible semester course in selected aspects of performance, theory, literature or history. See the Schedule of Classes for specific topics to be offered each semester.

**THEA 492. Independent Study in Theatre. 1-3 Hours.**

Semester course; variable hours. 1-3 credits per semester. May be repeated for a maximum of 9 credits. Prerequisites: senior standing as a major in theatre and approval of department chair and instructor. Individual instruction and supervision of a special project. Learning experiences should be designed with the supervising faculty member in the form of a contract between student and instructor. This course is limited to those students who have demonstrated an exceptional level of ability and intense commitment to their discipline.

**THEA 493. Professional Internship. 3-9 Hours.**

Semester courses; 3-9 credits. Restricted to theatre majors. A practicum in theatre conducted in cooperation with selected professional or semi-professional theatre organizations.

**THEA 494. Professional Internship. 3-9 Hours.**

Semester courses; 3-9 credits. Restricted to theatre majors. A practicum in theatre conducted in cooperation with selected professional or semi-professional theatre organizations.

**THEA 495. Senior Project: Portfolio Review. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisites: senior standing and a minimum of 18 credits in 300- or 400-level major courses. Restricted to theatre majors. A capstone experience integrating resume preparation and professional development within the field of theatre. Documentation of creative activities and achievements accumulated during theatre studies is compiled for a portfolio review.

**Theatre Lab (THEZ)****THEZ 221. Introduction to Scene Design Laboratory. 1 Hour.**

Semester course; 3 studio hours. 1 credit. Pre- or corequisite: THEA 221. Participation in departmental productions. Observation and participation in the practical application of scene design in performance.

**THEZ 223. Practicum in Theatre Technology Laboratory. 1 Hour.**

Semester courses; 3 studio hours. 1, 1 credit. Observation and participation in the practical application of theatre technology in performance.

**THEZ 224. Practicum in Theatre Technology Laboratory. 1 Hour.**

Semester courses; 3 studio hours. 1, 1 credit. Observation and participation in the practical application of theatre technology in performance.

**THEZ 225. Basic Stage Electronics-Lighting Laboratory. 1 Hour.**

Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

**THEZ 228. Basic Stage Costuming and Make-up Laboratory. 1 Hour.**

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

**THEZ 229. Introduction to Lighting Design Laboratory. 1 Hour.**

Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

**THEZ 305. Scene Design Laboratory. 1 Hour.**

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

**THEZ 306. Scene Design Laboratory. 1 Hour.**

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

**THEZ 321. Research Techniques for Costume Design Laboratory. 1 Hour.**

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

**THEZ 322. Research Techniques for Costume Design Laboratory. 1 Hour.**

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

**THEZ 323. Practicum in Advanced Theatre Technology. 1 Hour.**

Semester course; 3 studio hours. 1 credit. Pre- or corequisite: THEA 323. Observation and experience in a practical situation with an emphasis on leadership and crew management.

**THEZ 324. Practicum in Stage Lighting. 1 Hour.**

Semester course; 3 studio hours. 1 credit. Pre- or corequisite: THEA 324. Observation and experience in a practical situation with an emphasis on leadership and crew management.

**THEZ 326. Theatrical Sound Design Laboratory. 1 Hour.**

Semester course; 3 studio hours. 1 credit. Pre- or corequisite: THEA 326. Participation in departmental productions. Observation and participation in the practical application of sound design and execution in performance.

**THEZ 407. Advanced Scenic Technique Laboratory. 1 Hour.**

Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

**THEZ 421. Advanced Costume Design Laboratory. 1 Hour.**

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

**THEZ 422. Advanced Costume Design Laboratory. 1 Hour.**

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

**THEZ 429. Advanced Lighting Design Laboratory. 1 Hour.**

Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles and theories discussed in design/technical courses.

## School of Business

### Accounting (ACCT)

**ACCT 202. Accounting for Non-business Majors. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The course is open only to non-business students. A nontechnical introduction to the principles of financial and managerial accounting with emphasis on the use and interpretation of financial reports, managerial planning and control. The course is for the individual who seeks a basic knowledge of accounting and its uses. It is designed for the user of accounting information rather than the preparer. This course cannot be substituted for ACCT 203, 204 or 205. Students graduating with a major in the School of Business cannot receive credit for this course.

**ACCT 203. Introduction to Accounting I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Theoretical and technical facets of financial and managerial accounting for business. Accumulation, analysis, interpretation and uses of accounting information. Course will focus on financial accounting.

**ACCT 204. Introduction to Accounting II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 203 with a minimum grade of C. Theoretical and technical facets of financial and managerial accounting for business. Accumulation, analysis, interpretation and uses of accounting information. Course will focus on managerial accounting.

**ACCT 205. Introductory Accounting Survey. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Restricted to students in the post-baccalaureate undergraduate certificate programs in accounting and information systems, students seeking a B.S. in Financial Technology, students enrolled in the School of Engineering, or by permission of instructor. An accelerated course covering theoretical and technical facets of financial and managerial accounting for business. Accumulation, analysis, interpretation and uses of accounting information. May not be counted toward any of the B.S. programs offered by the School of Business other than the B.S. in Financial Technology.

**ACCT 291. Topics in Accounting. 1-3 Hours.**

Semester course. 1-3 credits. Prerequisite: permission of instructor. An in-depth study of selected accounting topics. Graded as pass/fail.

**ACCT 303. Intermediate Accounting I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 203 or ACCT 205 with a minimum grade of C. Restricted to students who have completed at least 54 credit hours (junior standing) or 24 credits with minimum cumulative GPA of 2.5. Focuses on financial accounting and accounting standards, including the conceptual framework for financial accounting. Includes an in-depth study of the income statement, the balance sheet and an introduction to the statement of cash flows. Also covers valuation of inventories.

**ACCT 304. Intermediate Accounting II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 303 with a minimum grade of C. Restricted to students who have completed at least 54 credit hours (junior standing). Continues the study of financial accounting, covering accounting for acquisition and disposition of property, plant and equipment, intangible assets, contingencies, long-term liabilities, stockholders' equity, earnings-per-share, and investments.

**ACCT 305. Intermediate Accounting III. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 304 with a minimum grade of C. Restricted to students who have completed at least 54 credit hours (junior standing). Continues the study of financial accounting, covering accounting for income taxes, accounting for pensions and post-retirement benefits, accounting for leases, accounting changes and error analysis, statement of cash flows, full disclosure in financial reporting and International Financial Reporting Standards.

**ACCT 306. Cost Accounting. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 204 or ACCT 205 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). Cost accumulation for inventory pricing and income determination. Cost behavior concepts for planning and control. Job order and process cost systems, standard costs, budgets and special topics in relevant costs for managerial decisions.

**ACCT 307. Accounting Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 303 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). Examines design and evaluation of manual and computerized accounting information systems. Emphasis on the system of internal controls and the impact of computers on those controls.

**ACCT 401. Governmental and Not-for-profit Accounting. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 304 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). The role of accounting in the management of resources entrusted to government and nonprofit entities, including accounting and reporting standards. Accounting in municipalities and nonprofit entities such as hospitals, charitable and health organizations, and colleges and universities.

**ACCT 402. Advanced Cost Accounting. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 303 and ACCT 306, each with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). An advanced conceptual cost/managerial course designed to familiarize students with the more complex aspects of cost/managerial accounting concepts including process costing, standard costing, activity-based costing, Just-in-Time inventory systems, enterprise resource planning and issues relating to the relative strengths and limitations of managerial accounting.

**ACCT 403. Management Control Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 303 and ACCT 306, each with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). An advanced conceptual management control systems course designed to expose students to the theoretical and conceptual foundations of management control systems and to integrate accounting into the managerial decision/control process. Uses a predominantly case-oriented approach. While primary emphasis will be on integrating accounting into the management control process, significant attention also will be devoted to the behavioral issues involved in management control system design and implementation. Students also will receive hands-on experience in structuring and formulating control systems in an Enterprise Resource Planning system environment.

**ACCT 404. Introduction to Forensic Accounting and Fraud Examination. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 304 with a minimum grade of C. Introduction to the area of forensic accounting. Topics include the detection of fraudulent financial reporting, employee fraud, money laundering, digital forensic analysis and electronic evidence, evidence management, computer forensics, and an introduction to business valuation.

**ACCT 405. Tax Accounting Principles. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 204 or ACCT 205 with a minimum grade of C. Restricted to students who have completed at least 54 credit hours (junior standing). Income tax legislation and the concept of taxable income; federal income tax law applicable to individuals.

**ACCT 406. Auditing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 304 and 307 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). A study of the conceptual, theoretical and practical procedures applicable to auditing – both external and internal. Primary emphasis is placed upon the theory of audit evidence; the objectives, techniques and procedures for financial and operational audit reports.

**ACCT 408. Accounting Decision Analytics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 307 with a minimum grade of C; and MGMT 301, SCMA 301, STAT 210 or STAT 212. Restricted to students who have completed at least 54 credit hours (junior standing). The spreadsheet analysis and written communication of data relating to accounting-focused business problems.

**ACCT 409. Research and Communication for Accountants. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 304 with a minimum grade of C. Restricted to students who have completed at least 54 credit hours (junior standing). Focuses on the research of accounting issues and preparation of technical reports relating to that research. Leadership and team dynamics are explored using group projects.

**ACCT 410. Advanced Tax Accounting. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 303 and ACCT 405, each with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). Complex tax problems of the trust, partnership and corporation. Particular emphasis is given to tax planning.

**ACCT 413. Advanced Accounting. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 304 with a minimum grade of C. Financial accounting for complex business relationships, including business combinations, consolidated financial statements, restatement of foreign financial statements, foreign currency transactions, derivative instruments, partnership accounting and pension accounting. Emphasis is on current issues confronting accountants and financial reporting and the potential impact of these issues on business entities.

**ACCT 491. Topics in Accounting. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisites vary by topic. Study of current topics. Topics may vary by semester. See the Schedule of Classes for specific topics to be offered.

**ACCT 492. Independent Study. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Restricted to accounting majors who have completed at least 54 credit hours (junior standing). The purpose of this course is to allow international students to take advantage of an internship work experience. Graded as pass/fail.

**ACCT 493. Internship in Accounting. 3 Hours.**

Semester course; 3 credits. Prerequisites: ACCT 304 with a minimum grade of B; senior standing in accounting and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. Involves students in a meaningful experience in a setting appropriate to the major. A structured course in which the first three weeks are spent in the classroom, followed by 11 weeks at a workplace. The last week of the semester students return to the classroom for discussion and reflection on the work experience. An internship portfolio is required at the end of the course. Graded as pass/fail.

**ACCT 497. Guided Study in Accounting. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. Maximum total of three credits. Prerequisites: junior standing in accounting and approval of adviser and department chair prior to course registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

## Business (BUSN)

### **BUSN 201. Foundations of Business I. 3 Hours.**

Continuous courses; 3-3 lecture hours. 3-3 credits. Prerequisite: UNIV 112 or both ENGL 295 and HONR 200. First semester: Introduces students to basic business environments, entrepreneurial thinking, and business functions and practices. Helps students gain an integrated awareness of business and practice analytical skills needed for their advanced business courses and careers. Second semester: Examines business functions and practices needed for sustainable business operation, building on knowledge and skills from BUSN 201 and executing or analyzing an integrated project or comprehensive case analysis. Students should take BUSN 202 immediately following BUSN 201.

### **BUSN 202. Foundations of Business II. 3 Hours.**

Continuous courses; 3-3 lecture hours. 3-3 credits. Prerequisite: BUSN 201 with a minimum grade of C. First semester: Introduces students to basic business environments, entrepreneurial thinking, and business functions and practices. Helps students gain an integrated awareness of business and practice analytical skills needed for their advanced business courses and careers. Second semester: Examines business functions and practices needed for sustainable business operation, building on knowledge and skills from BUSN 201 and executing or analyzing an integrated project or comprehensive case analysis. Students should take BUSN 202 immediately following BUSN 201.

### **BUSN 225. Winning Presentations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Restricted to School of Business freshmen, sophomores and juniors in the foundation or advanced programs. Why are some presenters bad, some good and others great? Why do some people have more "presence" than others? What leadership skills work in a room full of people who are not on the same page? How does one pitch an idea in less than two minutes? Presentation skills involve more than just speaking in public. Good presentation skills require an understanding of yourself, your subject and your audience. This course will explore the skills involved in mastering all of these.

### **BUSN 291. Topics in Business. 1-3 Hours.**

Semester course; 1-3 variable hours. 1-3 credits. May be repeated for credit with different topics for a maximum of 6 credits. Study of current topics in the field of business providing specialized course work that provides deeper, more in-depth understanding. See Schedule of Classes for topics offered each semester and prerequisites as determined by instructor.

### **BUSN 391. Topics in Business. 1-3 Hours.**

Semester course; 1-3 variable hours. 1-3 credits. May be repeated for credit with different topics for a maximum of 6 credits. Study of current topics in the field of business providing specialized course work that provides deeper, more in-depth understanding. See Schedule of Classes for topics offered each semester and prerequisites as determined by instructor.

### **BUSN 400. Principles of Consulting. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: junior status and acceptance into International Consulting Program. Corequisite: BUSN 401. Intended to provide students with "formal" training in how to conduct consulting engagements. The course is designed to teach students how to conduct consulting engagements by providing academic background through readings and lectures, real-world perspectives from practicing consultants, and practice application through simulations and cases. The course culminates in a consulting engagement with a real client from the Richmond business community to provide the students with an opportunity to apply the consulting skills they learned in the classroom.

### **BUSN 401. International Consulting Practicum. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: junior status and acceptance into International Consulting Program. Corequisite: BUSN 401. Intended to provide students with an opportunity to apply the lessons learned about consulting in BUSN 400 to a real business client in a foreign country.

### **BUSN 490. Emerging Topics in Business. 1-3 Hours.**

Semester course; 1-3 variable hours. 1-3 credits. May be repeated for credit with different topics for a maximum of 6 credits. Emerging topics in business designed to provide material not covered by an existing course or program. May be general business or multidisciplinary. See Schedule of Classes for topics offered each semester and prerequisites as determined by instructor.

### **BUSN 491. Special Topics in Business. 1-3 Hours.**

Semester course; 1-3 variable hours. 1-3 credits. May be repeated for credit with different topics for a maximum of 6 credits. Study of current topics in the field of business providing specialized course work that provides deeper, more in-depth understanding. See Schedule of Classes for topics offered each semester and prerequisites as determined by instructor.

### **BUSN 492. Independent Study in Business. 1-3 Hours.**

Semester course; 1-3 variable hours. 1-3 credits. May be repeated for credit with different topics for a maximum of 6 credits. Prerequisites: School of Business major and permission of instructor. Students must submit a written proposal to be approved by the supervising instructor prior to registration. The number of credit hours will be determined by the director of undergraduate studies. Intensive study under the supervision of a faculty member in an area not covered in-depth or contained in other School of Business courses and/or independent investigation and research of business problems through readings, data collection and analysis. Written and oral progress reports as well as a final report and presentation are required.

### **BUSN 493. Internship in Business. 1-3 Hours.**

Semester course; 1-3 variable hours. 1-3 credits. May be repeated for credit with different topics for a maximum of 6 credits. Prerequisites: School of Business major and permission of associate dean for undergraduate studies. Intention to enroll must be indicated to the instructor or director prior to advance registration for semester of credit. Involves students in a meaningful experience, typically 20 hours per week, in a setting appropriate to business. Written interim and final reports required.



## Economics (ECON)

### **ECON 101. Introduction to Political Economy. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Seminar on the development of critical thought and economic analysis of policy issues. Focus is on how policy choices affect society and the individual, the economic methodology that guides policy choices, and the institutional and political environments within which policy is derived. Issues cover a broad range of topics including environmental issues, tax policy, inflation expectations, unemployment, foreign trade and the effectiveness of fiscal and monetary policies. Crosslisted as: INTL 102.

### **ECON 203. Introduction to Economics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A survey of economic principles, institutions and problems. The course is designed to provide basic economic understanding for students who do not expect to major in economics or in the School of Business. Not applicable for credit toward economics and business majors. Also note that students may receive credit for only two of the following three courses: ECON 203, 210 or 211.

### **ECON 205. The Economics of Product Development and Markets. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to some of the fundamental economic concepts necessary to effectively operate in today's marketplace. Basic elements of microeconomics, net present value analysis and market strategy will be covered in class. The goal is to provide students with a better understanding of how to approach business problems and of proven problem-solving techniques. Appropriate for engineering and non-engineering students.

### **ECON 210. Principles of Microeconomics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A course designed to acquaint the student with a theoretical and practical understanding of the economic institutions and problems of the American economy with a focus on microeconomics. Note that students may receive credit toward their degree requirements for only two of the following three courses: ECON 203, 210 and 211.

### **ECON 211. Principles of Macroeconomics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with minimum grade of a B or ECON 210. A course designed to acquaint the student with a theoretical and practical understanding of the economic institutions and problems of the American economy with a focus on macroeconomics. Note that students may receive credit toward their degree requirements for only two of the following three courses: ECON 203, 210 and 211.

### **ECON 291. Topics in Economics. 1-3 Hours.**

Variable hours. Variable credit. Maximum of 3 credits per topic. Prerequisite: permission of instructor. An in-depth study of selected business topics. Graded as pass/fail at the option of the department.

### **ECON 300. Contemporary Economic Issues. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B or ECON 210; ECON 211; and junior standing. Students will learn to think critically about current policy issues using basic economic principles. Communication skills will be developed through presenting, discussing and debating alternative positions in class. Students will work in teams to outline the basic economic incentives and the direct and indirect costs and benefits associated with different policy actions. Through teamwork students will practice leadership skills and methods to manage group dynamics. Topics will vary by semester and may include the economics of discrimination, the environment, health care, cultural arts, education, business ethics, fiscal policy, monetary policy, globalization, inequality and immigration.

### **ECON 301. Microeconomic Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B or ECON 210; and SCMA 212 or MATH 200. Analysis of the principles that govern production, exchange and consumption of goods and services. Topics include demand analysis, production and cost theory, price and output determination, theory of markets and distribution theory.

### **ECON 302. Macroeconomic Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B grade or ECON 210; ECON 211; and SCMA 212 or MATH 200. A general survey of national income analysis and macroeconomic theory. Detailed study of public policies affecting price levels, employment, economic growth and the balance of payments.

### **ECON 303. Managerial Economics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B and ECON 211; or ECON 210 and ECON 211; and SCMA 212 or MATH 200. This course is restricted to students who have completed at least 54 credit hours (junior standing). Application of tools of economic analysis to allocation problems in profit and nonprofit organizations. Models for evaluating revenue, production, cost and pricing will be presented. Emphasis on developing decision rules for turning data into information for solving problems.

### **ECON 305. Public Finance - State and Local. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B or ECON 210. An economic analysis of state and local government budgeting, revenue sources and expenditures.

### **ECON 307. Money and Banking. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 211. A study of money, financial markets and the financial structure with emphasis on commercial banks and the Federal Reserve System. Relationships between economic activity and money supply are introduced.

### **ECON 312. E-commerce and Markets for Information Goods. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B or ECON 210. This course surveys the ways that information and emerging information technologies affect market organization and market efficiency. Competitive strategies and regulatory policy for information markets also are considered. Topics include network effects, first mover advantages, auctions, price discrimination and organizational structure.

### **ECON 313. Economics of Transportation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B or ECON 210. An economic analysis of the transportation industry with special emphasis on regulation, public policy and urban transportation.

### **ECON 315. Economic Development. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B and ECON 211; or ECON 210 and ECON 211. Introduction to the process of economic development. Surveys development theory and experiences of underdeveloped countries of Africa, Asia, Latin America and the Caribbean and of developed countries. Explores obstacles to development and policies and tools for stimulating economic development. Crosslisted as: AFAM 315/INTL 315.



**ECON 321. Urban Economics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B or ECON 210. An introduction to urban economics, with an emphasis on the economics of agglomeration and the role of externalities in the urban economy. Economic analysis of the provision of urban public services and urban public financing, especially in politically fragmented areas. Crosslisted as: URSP 321.

**ECON 325. Environmental Economics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). The application of economic analysis to externalities such as air and water pollution, pesticide control, land use planning and other environmental issues. The role of cost/benefit analysis in the decision-making process is developed. Efficiency and equity issues are evaluated.

**ECON 329. International Economics. 3 Hours.**

3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B and ECON 211; or ECON 210 and ECON 211. An analysis of economic and political influences on exports and imports, balance of payments, foreign investment, exchange rates and international monetary systems. Crosslisted as: INTL 329.

**ECON 333. Behavioral Economics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B or ECON 210. Identifies when behavior systematically violates mainstream models and provides alternative behavioral models which are psychologically and empirically plausible. Discusses a variety of violations including endowment effects, framing, dynamic inconsistency and the winner's curse.

**ECON 338. Game Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B or ECON 210. Analyzes strategic situations using game theory. Applies the analysis to a variety of settings and questions. Develops an understanding of the uses and limitations of the analysis.

**ECON 344. Biodiversity and Ecological Economics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B or ECON 210. Explores the use of both economic and ecological approaches to the identification, valuation and protection of biological diversity and ecological integrity. Investigates the potential of coupled human and natural systems through construction and computer simulation of dynamic ecological-economic models.

**ECON 402. Business Cycles and Forecasting. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B and ECON 211; or ECON 210 and ECON 211. An examination of repetitive variations in business activity. The measurement and analysis of economic fluctuations and how they affect the business environment. Stresses modern forecasting techniques.

**ECON 403. Introduction to Mathematical Economics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B and ECON 211; or ECON 210 and ECON 211. This course is restricted to students who have completed at least 54 credit hours (junior standing). The application of mathematical techniques to economic theory and economic models.

**ECON 419. History of Economic Thought. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B and ECON 211; or ECON 210 and ECON 211. A survey of the ideas of major economic contributors to modern economic thought. Theories of value, growth and distribution from the 18th through the 20th centuries will be presented.

**ECON 421. Government and Business. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B or ECON 210. The application of economic analysis to the behavior of business, industry and government regulation. Topics include the causes and exercise of monopoly power, antitrust enforcement, public utilities and industry studies.

**ECON 431. Labor Economics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 300, 301 and 302; and STAT 210, STAT 212, MGMT 301 or PSYC 214. This course is restricted to students who have completed at least 54 credit hours (junior standing). Analysis of labor markets and institutions to gain an understanding of the process of wage and employment determination. Both historic and current topics are included.

**ECON 441. Experimental Economics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 300, ECON 301 and 302; and STAT 210, STAT 212, MGMT 301 or PSYC 214; and junior standing. Students will learn about the leading models of decision making and human behavior in markets. The course will focus on using experimental methods to test the models' hypotheses. Students will learn how to design experiments, collect experimental data, and how to examine the data and interpret the results.

**ECON 442. Economic Growth. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 203 with a minimum grade of B and ECON 211; or ECON 210 and ECON 211. Explores determinants of cross-country income differences using economic models, economic history and data analysis. Analyzes factors that influence productivity growth and diffusion of technology between countries.

**ECON 489. Senior Seminar in Economics. 3 Hours.**

3 lecture hours. 3 credits. Prerequisites: ECON 300, ECON 301 and 302; STAT 210, STAT 212, MGMT 301 or PSYC 214; and junior standing. Analysis of economic theory and problems. Students will study a few topics in depth, focusing on understanding the current research, critically analyzing controversial issues and using data to investigate competing claims.

**ECON 491. Topics in Economics. 1-3 Hours.**

Semester course; variable hours. Variable credit. Maximum of 3 credits per topics course; maximum total of 6 credits for all topics courses. Prerequisite: junior standing. An in-depth study of a selected economic topic, to be announced in advance.

**ECON 492. Independent Study in Economics. 1-3 Hours.**

Semester course; 1-3 credits. Maximum total of 3 credits. Prerequisites: junior or senior standing as an economics major and approval of adviser and department chair prior to course registration. Intensive study under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

**ECON 493. Internship in Economics. 1-3 Hours.**

Semester course; the student is expected to work at the site 15-20 hours per week. 1-3 credits. Prerequisites: junior standing, a minimum of 3.0 GPA in economics courses, at least 15 economics credits and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during registration for semester of credit. The internship is designed to give students practical experience in an appropriate supervised environment in the public or private sector. Graded as pass/fail.

## Finance, Insurance and Real Estate (FIRE)

### **FIRE 291. Topics in Finance, Insurance and Real Estate. 1-3 Hours.**

Variable hours. Variable credit. Maximum of 3 credits per topic. Prerequisite: permission of instructor. An in-depth study of selected business topics. Graded as pass/fail at the option of the department.

### **FIRE 301. Personal Financial Planning. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Designed to assist households and those providing financial services and advice to households in making complex financial decisions. Units include income and expenditure, credit, borrowing, banking, savings, insurance, home buying, investment, and estate planning.

### **FIRE 305. Principles of Real Estate. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Focuses on the language, principles, practices and laws that govern the real estate enterprise, including property rights, legal elements, physical aspects of location and production, brokerage, valuation, ethical dimensions, development, financing and land use.

### **FIRE 306. Regulatory Aspects of Safety and Risk Control. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Examines political, scientific and social concepts of risk that influence the regulation of certain societal hazards and threats. Includes a survey of federal and state laws, regulations and standards that impact upon employment, the environment, industrial security, consumer protection and occupational safety and health.

### **FIRE 307. System Safety. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Addresses the concepts and practices of system safety; included are basic system concepts, application of system safety techniques, qualitative and quantitative applications such as fault-free, failure-mode-and-effects, MORT and cost-benefit analyses.

### **FIRE 308. Incident Investigation and Analysis. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Reviews various conceptual and analytical models used in accident/incident investigation strategies and reporting systems, report formats, data collection methods, causal inferences, problem identification and data analysis; in-depth case studies and epidemiological reviews of recent events will be emphasized.

### **FIRE 309. Risk and Insurance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Nature of risk; insurance and other risk-handling methods; examination of basic life, health, property and liability principles and coverages.

### **FIRE 311. Financial Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 212, MATH 200 or SCMA 212; and ACCT 203 or ACCT 202 (for non-business majors). This course is restricted to students who have completed at least 54 credit hours (junior standing) or 24 credits with minimum cumulative GPA of 2.5. Principles of optimal financial policy in the procurement and management of wealth by profit-seeking enterprises; the application of theory to financial decisions involving cash flow, capital structure and capital budgeting.

### **FIRE 312. Financial Modeling. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 311 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). This course is designed to introduce students to a wide array of primarily Excel techniques used in financial model building. Students will be introduced to techniques such as data tables, solver, matrix manipulation, array formulas, pivot tables, etc., to create financial models that are common in the areas of finance, risk management and real estate finance.

### **FIRE 313. Financial Management for Small Business. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 311. This course is restricted to students who have completed at least 54 credit hours (junior standing). This course emphasizes financial management needs for entrepreneurs or persons who expect to be employed in closely held corporations.

### **FIRE 315. Real Property Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Real property economics, planning, construction, marketing and management of leased properties.

### **FIRE 316. International Financial Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 311. This course is restricted to students who have completed at least 54 credit hours (junior standing). Financial management of business in an international environment. Emphasis on tools and techniques to prepare financial managers of multinational firms to effectively respond to the challenges of the international environment. Crosslisted as: INTL 416.

### **FIRE 317. Investments. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 311; and SCMA 301, STAT 210, STAT 212, STAT 312 or STAT 541. This course is restricted to students who have completed at least 54 credit hours (junior standing). An analysis of the market for long-term corporate securities. Emphasis is given to the valuation of bonds, common stocks, options and convertible securities, and portfolio concepts. Designed to provide an understanding of the functioning of an efficient market.

### **FIRE 321. Intermediate Financial Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 312 with a minimum grade of C. Pre- or corequisite: SCMA 302, MATH/STAT 309, STAT 314 or STAT 321. This course is restricted to students who have completed at least 54 credit hours (junior standing). Advanced topics in financial management with emphasis on the theoretical bases for the valuation of the firm.

### **FIRE 325. Real Estate Law. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Legal fundamentals of real estate including contracts, risk management, environmental and ethical issues, concepts of title, title examination, easements, conveyances, liens and recording statutes affecting real estate.

### **FIRE 329. E-business Risk Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INFO 202. This course is restricted to students who have completed at least 54 credit hours (junior standing). An analysis of the risks associated with e-business and the practice of e-commerce.

**FIRE 359. Issues in Risk Management and Insurance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. The course focuses on timely issues in the field of risk management and insurance. Students will consider the role of government and the insurance industry as well as the use of other financial solutions in handling risks faced by businesses and individuals. The topics covered change to reflect current societal and industry issues and to explore new risk management innovations.

**FIRE 413. Comparative Financial Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 311. This course is restricted to students who have completed at least 54 credit hours (junior standing). An analysis of the structure and functioning of financial systems in different parts of the world. Emphasis is on the evolution of such systems in relation to the U.S. financial system. Different regions of the world may be studied in different semesters. Crosslisted as: INTL 413.

**FIRE 417. Security Analysis and Portfolio Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 317 with a minimum grade of C; and SCMA 302, MATH 309/STAT 309, STAT 314 or STAT 321. This course is restricted to students who have completed at least 54 credit hours (junior standing). A detailed analysis of stocks and bonds as well as options and futures. Emphasis is on models for portfolio selection, revision and performance evaluation.

**FIRE 419. Advanced Risk and Insurance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 311. This course is restricted to students who have completed at least 54 credit hours (junior standing). It is a risk and insurance course with emphasis on more mathematical computations and analysis. Market, credit and operational risks are covered, along with legal and catastrophic risk assessments. Sustainability is important to this course. Topics covered include (but not limited to) forecasting of losses – loss triangles and computations of reserves; risk mapping and the risk management matrix; cost/benefit and risk/award analyses; pricing; capital structure, risk-based capital and economic capital; financial statements using audit techniques (accounting); insurance regulation; life cycle financial risks; insurance solutions to property/casualty and life/health risks.

**FIRE 424. Property and Liability Insurance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 309. This course is restricted to students who have completed at least 54 credit hours (junior standing). Property and liability risk identification and measurement. Major commercial line coverages including fire, marine, automobile, general liability, worker's compensation, fidelity and surety bonds.

**FIRE 425. Real Estate Appraisal. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 305 or FIRE 316. This course is restricted to students who have completed at least 54 credit hours (junior standing). Theory and practice of real property valuation from fundamental concepts to complex income-producing properties and partial-interest valuations. Technology-related tools are employed in the course, including financial modeling with various software programs.

**FIRE 429. Property and Liability Insurance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 309 or FIRE 333. This course is restricted to students who have completed at least 54 credit hours (junior standing). Property and liability risk identification and measurement. Major commercial line coverages including fire, marine, automobile, general liability, worker's compensation, fidelity and surety bonds.

**FIRE 435. Real Estate Finance and Capital Markets. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Corequisite: FIRE 311. This course is restricted to students who have completed at least 54 credit hours (junior standing). Instruments, techniques and institutions of real estate finance; the mortgage market; financing process; mortgage risk analysis; creative financing; emphasis on policies and procedures used in financing residential and commercial properties and their interaction with the capital markets. Technology-related tools are employed in the course, including financial modeling with various software programs.

**FIRE 439. Life and Health Insurance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. The function, nature and uses of life and health insurance and annuities; operational aspects of life insurance companies. The course covers insurance solutions for life cycle risks: death; health and longevity – sustainability; legal and tax aspects. Full-time students who pass this course can receive credit for the CLU HS323 examination from the American College. See instructor for details.

**FIRE 441. Funds Management in Financial Institutions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 312 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). Funds management techniques for selected financial institutions including investment companies (mutual funds), life and casualty insurers, savings and loans, mutual savings banks, commercial banks, and pension funds.

**FIRE 444. Occupational Safety, Health and Security. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Covers the principles and practices, and regulatory dimensions of occupational safety, health and security. Causes of workplace health hazard exposures, accidents and domestic and international industrial violence are studied with an emphasis on prevention. Characteristics of effective occupational safety, health and workplace security programs are studied to facilitate understanding and application in the workplace. Crosslisted as: MGMT 444.

**FIRE 445. Real Estate Investment Analysis. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 425 and FIRE 435. This course is restricted to students who have completed at least 54 credit hours (junior standing). This is the capstone course for real estate majors and covers the analytical methods and tools useful for analyzing commercial real estate investments, including a multidisciplinary approach to financial, spatial and social economics, which builds a cohesive framework for analyzing complex investment decisions emphasizing fundamentals of property and financial markets.

**FIRE 449. Employee Benefit Planning. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Management of group life, health, disability and retirement plans. Governmental and employers' solutions to life cycle risks – sustainability through social insurance programs, group insurance and innovations. The course reflects the dynamic nature of this field and requires cost/benefits analysis, best solutions to risks and a complete portfolio project of plan design, cost considerations, funding, regulation and tax considerations.

**FIRE 451. Options, Futures and Swaps. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 321 with a minimum grade of C or FIRE 317 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). Analysis and valuation of speculative securities and markets, including options, futures and swaps, with emphasis on their use for hedging and speculative purposes. Major valuation models and term structure models are discussed with applications to problems in finance considered.

**FIRE 459. Insurance Law. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. The course covers the legal concepts and doctrines applicable to insurance. Fundamental legal aspects of all risks and aspects of sustainability. The course provides legislative issues for all solutions to life cycles risks: life and health insurance, pensions, catastrophes (natural and man-made such as terrorism) and property and liability insurance.

**FIRE 461. Cases in Financial Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 321 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). Cases involving financial decisions for various forms of business enterprises.

**FIRE 469. Advanced Property/Casualty Insurance: Alternative Markets. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 309 or FIRE 419. This course is restricted to students who have completed at least 54 credit hours (junior standing). Property and liability risk with emphasis on alternative, less-regulated insurance solutions to all types of risks. The course includes sustainability issues and the way to mitigate natural and man-made catastrophes including sophisticated modeling and techniques. The course covers Lloyds of London; excess and surplus lines carriers; risk retention group, self-insurance, captives and shadow insurance; reinsurance; multilayers of coverage; catastrophe bonds; terrorism; regulation; liability issues globally; social responsibility.

**FIRE 479. Managing Financial Risk. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 309 and FIRE 317. This course is restricted to students who have completed at least 54 credit hours (junior standing). Sources of financial risk. Measurement and uses of enterprisewide financial risk techniques. A variety of analytical tools will be used to learn about value at risk, credit risk, stress testing, financial risk management and actuarial models, and how to manage financial risk.

**FIRE 491. Topics in Finance, Insurance and Real Estate. 1-3 Hours.**

Semester course; variable hours. Variable credit. Maximum of 3 credits per course; maximum total of 6 credits for all topic courses. Prerequisite: junior standing. An in-depth study of a selected business topic, to be announced in advance.

**FIRE 492. Independent Study in Finance, Insurance and Real Estate. 1-3 Hours.**

Semester course; 1-3 credits. Maximum total of 3 credits. Prerequisites: junior or senior standing as a major in a business curriculum and approval of adviser and department chair prior to course registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

**FIRE 493. Internship in Finance, Insurance and Real Estate. 3 Hours.**

Semester course; 3 credits. Course restricted to students with junior standing and a concentration in finance or risk management and insurance or a declared major in financial technology or real estate, a minimum GPA of 2.5, and permission of the Department of Finance, Insurance and Real Estate chair or the director of the insurance or real estate programs. Involves students in a meaningful experience in finance, insurance or real estate. Intention to enroll must be indicated to the chair or appropriate program director.

**Information Systems (INFO)****INFO 160. Digital Literacy: Computer Concepts, Internet, Digital Devices. 1 Hour.**

Semester course; 1 credit. Overview of basic computer concepts, the Internet, new technologies and digital security. Topics include but are not limited to computing devices – hardware and software – skills for using and evaluating Internet content and security with digital devices. This course provides the foundation in digital technologies to prepare students for other business courses and application software courses in the INFO16X series. Administered as a self-paced course with all online content. Graded as pass/fail at 80 percent pass level with on-campus assessment. Purchase of online training/assessment package required.

**INFO 161. Digital Literacy: Word Processing Skills I. 1 Hour.**

Semester course; 1 credit. Introduces students to academic and professional word processing skills. Topics include but are not limited to document preparation and modification, tables and graphic enhancements, collaboration, and formatting for research papers. The course will help students prepare documents to support professional tasks and other VCU course work. Administered as a self-paced course. Graded as pass/fail at 80 percent pass level with on-campus assessment. Purchase of online training/assessment package required.

**INFO 162. Digital Literacy: Spreadsheets Skills I. 1 Hour.**

Semester course; 1 credit. Introduces students to academic and professional spreadsheet skills. Topics include but are not limited to the entering of text, numbers and formulas; formatting; moving; copying; recalculation; retrieving; charting; saving; and printing with introductory coverage of data manipulation. The course will help students prepare analyses, tables and charts to assist with professional tasks and other VCU course work. Administered as a self-paced course. Graded as pass/fail at 80 percent pass level with on-campus assessment. Purchase of online training/assessment package required.

**INFO 163. Introduction to Web Page Design and Application Software. 1 Hour.**

Semester course; 1 credit. Introduces students to Web page design and construction using application software. Topics include Web page creation and modification, hypertext links, tables, graphics, and website organization. Graded as pass/fail. Administered as a self-paced, computer-aided instructional course.

**INFO 164. Digital Literacy: Word Processing Skills II. 1 Hour.**

Semester course; 1 credit. Presents intermediate level academic and professional word processing skills. Topics include but are not limited to master documents, newsletters, forms, macros and linking to other applications. This course is designed for students wanting to advance their previous word processing skills. Administered as a self-paced course. Graded as pass/fail at 80 percent pass level with on-campus assessment. Purchase of online training/assessment package required.

**INFO 165. Digital Literacy: Spreadsheet Skills II. 1 Hour.**

Semester course, 1 credit. Presents intermediate-level academic and professional spreadsheet skills. Topics include but are not limited to advanced formulas, statistical and financial functions, multiple worksheet/workbook management, macros and pivot tables. This course is designed for students wanting to advance their previous spreadsheet skills. Administered as a self-paced course with all online content. Graded as pass/fail at 80 percent pass level with on-campus assessment. Purchase of online training/assessment package required.



**INFO 166. Digital Literacy: Database Skills. 1 Hour.**

Semester course; 1 credit. Introduces students to academic and professional database skills. Topics include but are not limited to creating and editing tables and forms, sorting and filtering data, and generating reports. Administered as a self-paced, online course. Graded as pass/fail at 80 percent pass level with on-campus assessment. Purchase of online training/assessment package required.

**INFO 167. Introduction to Internet Researching. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Course emphasizes Internet search tools and research skills development while expanding students understanding of the World Wide Web and its resources. Students will learn to explore and evaluate the various types of search sites, including the VCU Library Internet resources and learn skills for developing researching strategies. Using a microcomputer-based Web browser such as Internet Explorer or Netscape, students will learn about advanced browser features that will aid them in their search efforts. This course provides the necessary foundation to help students better find and use Web resources for documents and papers that other VCU course work may require.

**INFO 168. Digital Literacy: Presentation Skills. 1 Hour.**

Semester course; 1 credit. Introduces students to academic and professional presentation skills. Topics include but are not limited to creating and editing presentations, creating and modifying images/graphics, and use of video/audio media tools. The course will help students prepare presentations for professional tasks and other VCU course work. Administered as a self-paced course. Graded as pass/fail at 80 percent pass level with on-campus assessment. Purchase of online training/assessment package required.

**INFO 169. Multimedia Presentations. 1 Hour.**

Short course; 1 lecture hour. 5 weeks. 1 credit. Familiarizes students with the fundamental use of multimedia to enhance presentations. Topics include adding animation, creating templates, linking to other resources as well as audio and video. The course will help students to prepare more effective and professional presentations.

**INFO 202. Introduction to E-business Technologies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INFO 160 or passing score on the Knowledge Equivalency Test (see: [www.business.vcu.edu/infosys/ket.html](http://www.business.vcu.edu/infosys/ket.html)). Introduces students to the technologies used in e-business. Students will be introduced to current or emerging Web languages, e-business software development environments, Web application servers and other packages used in creating and running Web applications.

**INFO 250. Introduction to Programming. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 160 and MGMT 171. Introduces students to writing, testing and debugging Java programs using simple logic and algorithms. Basic Java applets and the graphic user interface are covered. Cannot be used as an elective in the information systems major.

**INFO 291. Topics in Information Systems. 1-3 Hours.**

Variable hours. Variable credit. Maximum of 3 credits per topic. Prerequisite: permission of instructor. An in-depth study of selected business topics. Graded as pass/fail at the option of the department.

**INFO 300. Information Technology Infrastructure. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Pre- or co-requisite: INFO 202, CMSC 245 or CMSC 255. Principles of computer hardware and software architecture, network communications technologies and security. Introduction to data structures.

**INFO 320. Business Intelligence and Data Mining. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 301. Restricted to students who have completed at least 54 credit hours (junior standing). Modeling business-related problems using information systems tools and quantitative techniques. Focus is on extraction, translation and loading of relevant business and external data, quantitative analysis, and presentation of findings. Typical problem situations involve suggested productivity improvements, revenue enhancement opportunities and marketing.

**INFO 323. Ethical, Social and Legal Issues in Information Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Restricted to students with junior standing. In-depth coverage of professional, ethical, legal, security and social issues and responsibilities in information systems. Topics include principles of ethics and ethical codes of conduct in the computing professions; contracts, law and regulations specific to information systems and cyberspace; and social issues such as weighing individual and state secrecy, privacy and transparency. Students may not receive degree credit for both INFO 323 and MGMT 323 or MGMT/ACCT 481.

**INFO 350. Intermediate Programming. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: a minimum grade of C in one of the following: INFO 202, INFO 250, CMSC 245 or CMSC 255; and MATH 211. Object-oriented programming and algorithmic design are introduced using C# and the .NET Framework. Emphasizes building business applications using the .NET Framework Class Library and the components, events and message handling therein. Intermediate Web application development is also covered. Students cannot receive credit for both CMSC 256 and INFO 350.

**INFO 360. Business Information Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INFO 160. This course is restricted to students who have completed at least 54 credit hours (junior standing). Provides an understanding of the importance of computer-based information in the success of the firm. Emphasis is on the role of information systems within each of the functional areas of business. Major concepts include data management, decision support and management information systems.

**INFO 361. Systems Analysis and Design. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Examines the concepts, tools and techniques used to develop and support computer-based information systems. Systems planning, analysis, design and implementation are covered. Behavioral and model building aspects of systems development are emphasized throughout.

**INFO 364. Database Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 202, CMSC 245 or CMSC 255; and MATH 211. This course is restricted to students who have completed at least 54 credit hours (junior standing). Designed to prepare students for development of systems involving databases and database management.

**INFO 370. Fundamentals of Data Communications. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 202, CMSC 245 or CMSC 255; and MATH 211. This course is restricted to students who have completed at least 54 credit hours (junior standing). Computer networks and data communications. Provides an understanding of the underlying concepts of computer networking. Emphasis is placed on terminology, techniques and issues in networking systems.



**INFO 450. Advanced Programming. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INFO 350 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). The course covers advanced programming concepts using the Java and C++ languages. Topics include pointers, advanced GUI components and the building of multithreaded applications containing reusable components based upon design patterns and advanced data structures. Students cannot receive credit for both CMSC 245/246 and INFO 450.

**INFO 451. Advanced Technology for E-business. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: grades of C or better in INFO 350 and 364, and junior standing. Focuses on the technical aspects of developing e-business systems using Web services and Web server controls to build visually interactive and highly responsive Web applications. Students will learn how various XML APIs (processing, messaging and distributed registries) are used under the umbrella of Web services to support the sharing of data and processes for e-business applications. The course will integrate the students' prior knowledge of client-side GUI development with server-side controls, components and behaviors in a multitiered environment that includes database connectivity.

**INFO 461. Information Systems Planning and Project Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INFO 361. Concentrated study of planning methods and techniques required for defining, planning, integrating and implementing information technology projects consistent with the organizational strategic plan and mission.

**INFO 463. Business Process Engineering. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INFO 361. This course is restricted to students who have completed at least 54 credit hours (junior standing). A survey of legacy system re-engineering technologies in which the student becomes familiar with a variety of tools used in practice and has the opportunity to develop applications using these tools under supervision. Selection of technologies is determined each semester.

**INFO 465. Projects in Information Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 350, 364, 370 and 461. The student's behavioral and technical skills developed in listed prerequisite courses are challenged by participating in a team systems development project. Appropriate computer-assisted software engineering tools are used throughout the project, from requirement specification to implementation and testing.

**INFO 468. Information Engineering. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 361 and INFO 364. This course is restricted to students who have completed at least 54 credit hours (junior standing). A study of information engineering as a model-based, data-centric approach to integrating organizational strategic planning with enterprise information systems development. Involves readings, group discussion and case studies.

**INFO 472. Infrastructure Services. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 370 and junior standing. Concepts and principles related to administering and securing information and communication technologies. Topics include management of infrastructure, hosts, applications and network security.

**INFO 474. Advanced Networking and Security. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 370 and junior standing. Detailed coverage of the TCP/IP protocol suite and its application to internetworking. Emphasis is placed on security, vulnerabilities and controls.

**INFO 491. Topics in Information Systems. 1-3 Hours.**

Semester course; variable hours. Variable credit. Maximum of 3 credits per course; maximum total of 6 credits for all topic courses. Prerequisite: junior standing. An in-depth study of a selected business topic, to be announced in advance.

**INFO 492. Independent Study in Information Systems. 1-3 Hours.**

Semester course; 1-3 credits. Maximum total of 3 credits. Prerequisites: junior or senior standing as a major in a business curriculum and approval of adviser and department chair prior to course registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

**INFO 493. Internship in Information Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Pre- or corequisites: 3.2 GPA in major, permission of director of ISRI, INFO 370 and 465. Intention to enroll must be indicated to director prior to or during advance registration of the semester of credit. Involves students in a meaningful experience, typically 20 hours per week, in a setting appropriate to the major. Students enrolled in INFO 493 may register for a maximum of six credit hours of other course work.

**Management (MGMT)****MGMT 121. The Business Environment. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Not open to juniors and seniors in the School of Business. Concepts and issues in contemporary business.

**MGMT 291. Topics in Management. 1-3 Hours.**

Variable hours. Variable credit. Maximum of 3 credits per topic. Prerequisite: permission of instructor. An in-depth study of selected business topics. Graded as pass/fail at the option of the department.

**MGMT 310. Managing People in Organizations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credits (junior standing). Introduces students to the management of people in organizations, focusing on the managerial skills, knowledge and activities needed for a successful business operation. Topics include planning, organizing, staffing and leading; effectively utilizing human capital to achieve an organization's objectives in today's competitive environment.

**MGMT 318. Study Abroad. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. Prerequisite: permission of instructor. A field study orientation with the purpose of exposing students to particular global marketplaces. Open to all majors.

**MGMT 319. Leadership. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 310. This course is restricted to students who have completed at least 54 credit hours (junior standing). Coverage of the major approaches to leadership considering individual, team, organizational and cultural perspectives. Emphasis on self-assessment and on historical and contemporary leadership cases.

**MGMT 321. Survey of Entrepreneurship. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Underlying concepts in entrepreneurship; the importance of entrepreneurs and the problems they face; entrepreneur characteristics and competencies; what makes an idea entrepreneurial; managing relations, ethics and sustainability; opportunity recognition, critical thinking and emphasis on innovative concept development; detailed concept feasibility analysis.

**MGMT 331. Human Resource Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 301, STAT 210 or STAT 212. This course is restricted to students who have completed at least 54 credit hours (junior standing). Introduces students to the role of human resource management in attracting and retaining a productive workforce. Includes human resource planning, recruitment and selection; employee diversity and development; performance appraisal and reward systems; labor and employee relations; and public policy related to HRM practices.

**MGMT 334. Organization Design and Effectiveness. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. Applies macro-organization theory to the effective design of organizational structure and processes. Examines the role of factors such as technology, structure, strategy and environment; power, politics and culture in organizations; and organizational life cycles.

**MGMT 389. Managerial Skills Development. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 310. A practicum in the development of personal, interpersonal and team-management skills as applied to leadership and teamwork.

**MGMT 403. Human Resource Development. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. Designed to improve qualifications of those seeking employment in the human resources field. Focuses on human resource development and organization development and their relationship to human resource management.

**MGMT 418. International Management. 3 Hours.**

3 lecture hours. 3 credits. Prerequisite: junior standing. The study of the environment of international business, ethics and social responsibility in international settings, culture and its effect on behavior and management practice, and the strategies and management practices of firms engaged in international activities. Aims to provide students with the knowledge, skills and sensitivities needed to be effective managers in the international business environment. Crosslisted as: INTL 418.

**MGMT 419. Doing Business in Europe. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing and permission of instructor. Designed primarily as a core integrative course for students enrolled in the Certificate in International Management Studies, but other students are welcome. The course has three goals: a) integration of foreign languages, European studies and international management; b) infusion of other business areas relevant to doing business in Europe (such as international marketing, finance law and economics); and c) the development of cultural sensitivity and social responsibility. The course will be organized as a series of seminars with faculty and other speakers from the above disciplines. Crosslisted as: INTL 419.

**MGMT 420. Labor and Employment Relations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 331. This course is restricted to students who have completed at least 54 credit hours (junior standing). Managerial decision-making in labor management relationships; the collective bargaining process and the administration of labor agreements; the impact of public policy and labor legislation.

**MGMT 422. Managing the Family Firm. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 321 or permission of instructor, and junior standing. Students are expected to develop specific strategies and approaches to enhance the effectiveness of the family firm. Designed for members of family firms as well as those who will be working in or providing goods or services for family enterprises. Topics include succession strategies; management and strategic planning; ownership issues; taxes-transfer, gift and estate; professionalizing the family firm; boards of directors in the family firm, family business growth, psychological issues, change and conflict in the family business; family relations; women in the family firm; the younger generation; consulting and education for family business; family business in society; global and ethnicity issues in family business; culture and values.

**MGMT 423. Social Entrepreneurship. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Restricted to students who have completed at least 54 credit hours (junior standing). An advanced management course in promoting societal good through entrepreneurial activities. Students will learn the various forms of entrepreneurship that benefit society, developing an understanding of the many contexts in which such entrepreneurship occurs and its impact on society. Students will identify issues of societal/environmental marginalization, ideate potential solutions, generate in-depth research relevant to course projects and take part in presentations regarding their findings and the development of a socially conscious venture.

**MGMT 431. Strategic Human Resource Management. 3 Hours.**

3 lecture hours. 3 credits. Prerequisite: MGMT 331. This course is restricted to students who have completed at least 54 credit hours (junior standing). A critical study of selected problems in human resource management.

**MGMT 433. Compensation Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 331. The design and implementation of compensation and reward systems that both support an organization's strategy and enhance organizational effectiveness.

**MGMT 434. Strategic Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 310; MKTG 301; FIRE 311; SCMA 301, STAT 210 or STAT 212; and SCMA 325. This course is restricted to business majors with senior standing. Integrative course to analyze policy issues at the overall management-level involving functional areas such as production, finance and marketing, in context with the economic, political and social environment.

**MGMT 435. New Venture Strategy and Initiation. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisites: MGMT 321; completion of MGMT 435 to enroll in MGMT 436. First semester: provides students with an integrated strategic analysis of entrepreneurial firms and how they establish competitive advantage. Second semester: engages students in intensive development of a comprehensive business plan using knowledge and skills from MGMT 435. Students should take MGMT 436 immediately following MGMT 435.

**MGMT 436. New Venture Strategy and Initiation. 3 Hours.**

Continuous courses; 3 lecture hours. 3-3 credits. Prerequisites: MGMT 321; completion of MGMT 435 to enroll in MGMT 436. First semester: provides students with an integrated strategic analysis of entrepreneurial firms and how they establish competitive advantage. Second semester: engages students in intensive development of a comprehensive business plan using knowledge and skills from MGMT 435. Students should take MGMT 436 immediately following MGMT 435.

**MGMT 444. Occupational Safety, Health and Security. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Covers the principles and practices, and regulatory dimensions of occupational safety, health and security. Causes of workplace health hazard exposures, accidents and domestic and international industrial violence are studied with an emphasis on prevention. Characteristics of effective occupational safety, health and workplace security programs are studied to facilitate understanding and application in the workplace. Crosslisted as: FIRE 444.

**MGMT 446. International Human Resource Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 331, INTL/MGMT 418 or ECON/INTL 329. Covers the application of human resource management activities in an international context. Highlights similarities and differences with domestic methods; current practices in the selection, development, compensation and maintenance of parent-country, host-country and third-country nationals; and the impact of regulatory and cultural differences between countries. Crosslisted as: INTL 446.

**MGMT 447. Human Resource Information Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 331. This course is restricted to students who have completed at least 54 credit hours (junior standing). Covers contemporary human resource information software used in the primary activities of human resource management involving recruitment, selection, performance appraisal, employee benefits, pay administration, safety and health, human resource development, job analysis, human resource planning and job structuring. Emphasis is on introducing the software and practical application through hands-on experience in the computer laboratory.

**MGMT 481. LAW FOR ACCOUNTANTS I. 3 Hours.****MGMT 491. Topics in Management. 1-3 Hours.**

Semester course; variable hours. Variable credit. Maximum of 3 credits per course; maximum total of 6 credits for all topic courses. Prerequisite: junior standing. An in-depth study of a selected business topic, to be announced in advance.

**MGMT 492. Independent Study in Management. 1-3 Hours.**

Semester course; 1-3 credits. Maximum total of 3 credits. Prerequisites: junior or senior standing as a major in a business curriculum and approval of adviser and department chair prior to course registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

**MGMT 493. Internship in Management. 3 Hours.**

Semester course; 3 credits. Prerequisites: senior standing in the major offering the internship and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. Involves students in a meaningful experience in a setting appropriate to the major. Graded as pass/fail at the option of the department.

**Marketing (MKTG)****MKTG 301. Marketing Principles. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 26 credit hours (sophomore standing). An introduction to the activities, set of institutions and processes for creating, communicating, delivering and exchanging offerings that have value for customers, clients, partners and society at large.

**MKTG 302. Marketing Problems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). A case course requiring the senior marketing student to apply their knowledge in solving marketing managerial problems. Marketing majors should take this course in the semester immediately following the term in which they complete MKTG 301.

**MKTG 310. Information for Marketing Decisions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MKTG 301; and MGMT 301, STAT 210, or STAT 212. This course is restricted to students who have completed at least 54 credit hours (junior standing). Students receive an overview of the marketing research process. The course includes coverage of primary research, secondary data sources and marketing information systems. Students learn to apply research findings to marketing decisions.

**MKTG 315. Buyer Behavior. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Study of the relevant psychological, sociological and anthropological variables that shape buyers' activities and motivations in household and organizational decision-making. Throughout the course, students consider the issue of why consumers behave as they do in the marketplace and the nature of their choices as individual, family and institutional buyers.

**MKTG 320. International Marketing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Designed to help students develop an understanding of international marketing policies and the differences among foreign marketing environments. Students compare and contrast domestic and international marketing and examine recent changes in the international marketing environment. Crosslisted as: INTL 320.

**MKTG 325. Business-to-business Marketing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MKTG 301 and junior standing. This course focuses on strategy development for marketers whose customers include other businesses, the government and/or institutions. It explores the buying behavior of these organizations and highlights how the product development and management processes for such customers differ from the processes used for consumer marketing.

**MKTG 330. Integrated Marketing Communications. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). An overview of the steps required to develop an integrated marketing communications campaign. Topics include advertising, public relations, sales promotion, personal selling and direct marketing. Special emphasis is placed on the role of new technologies and interactive media.

**MKTG 335. Introduction to Personal Selling. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Examines the fundamental nature of personal selling in the promotion mix, including the sales process and the techniques used in performing the selling function. Explains the diverse decisions and activities necessary to manage the outside sales force efficiently and effectively to achieve the organization's overall goals.

**MKTG 340. Retail Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). A comprehensive view of retailing and an application of marketing concepts in a practical retail managerial environment. Students learn to evaluate retail firms and to identify their strengths and weaknesses.

**MKTG 430. Experiential Marketing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MKTG 301, MKTG 330 and junior standing. This course will introduce the student to topics and strategies involving brand experiences and experiential marketing tactics. Students will explore experiential marketing, a marketing strategy designed to cultivate positive brand-consumer experience through products, communication and staged brand experiences. Additional concepts to be examined include brand strategy, marketing and the five senses, event marketing, mobile marketing, ambush marketing, guerilla marketing, venues and sponsorships, sampling, premiums, technology, social media, and data collection.

**MKTG 435. Selling in the Business Marketplace. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MKTG 301, MKTG 335 and junior standing. This course focuses on selling strategy and tactics for sales managers and field sales representatives whose customers include other businesses, government and/or institutions. Areas of concentration include preparing for, and conducting, effective business-to-business sales calls, including prospecting, scheduling customer sales meetings, needs identification, presentation and securing new business.

**MKTG 442. Services Marketing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Students develop both a theoretical and practical understanding of "the service product," including the role of customer service in retail and industrial settings. Students learn techniques for analyzing and improving service system design. Students develop an understanding of "quality" as it relates to service products, and they exercise a number of approaches for assessing and improving perceived service quality.

**MKTG 445. Nonprofit Marketing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Examines the relationship between marketing and organizational success in the nonprofit sector, as well as the impact of nonprofit organizations on local, national and global economies. Through real-world applications, students learn to combine marketing strategies and tactics with civic engagement, community service and corporate social responsibility. Students must complete a minimum of 20 service-learning hours with the nonprofit organization that is the focus of the course.

**MKTG 448. Digital Marketing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MKTG 301 and MKTG 330. This course is restricted to students who have completed at least 54 credit hours (junior standing). Examines Internet marketing as a necessary ingredient to successful worldwide marketing strategy. Students analyze markets using Web-based techniques for market evaluation, competitive analysis, market comparison and selection. Discussion includes comparison of e-business versus traditional business perspectives on marketing strategies and tactics. Crosslisted as: INTL 448.

**MKTG 450. Product Development and Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Study of the role of marketing in developing and managing products. Essential concepts include the use of project teams for product development and the application of a new product development process. Topics include innovation, technology, listening to the voice of the customer, product design, branding, positioning and product life-cycle management.

**MKTG 470. Field Project in Marketing. 3 Hours.**

Semester course; 3 credits. Prerequisite: MKTG 301. This course is restricted to students who have completed at least 54 credit hours (junior standing). Students take part in a real-world project under faculty supervision, with the topic announced in advance. Examples include conducting a marketing research project, creating an advertising campaign, writing a marketing case study about an existing business and developing a marketing plan.

**MKTG 475. Honors Seminar in Marketing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MKTG 301 and permission of department chair. This course is restricted to students who have completed at least 54 credit hours (junior standing). Students conduct research about major firms in the Richmond region. Chief marketing officers of these firms teach students about current marketing issues and evaluate the students' projects.

**MKTG 491. Topics in Marketing. 1-3 Hours.**

Semester course; variable hours. Variable credit, with a maximum total of 3 credits per course. For marketing majors, a maximum total of 6 credits for all topics courses. Prerequisite: MKTG 301. An in-depth study of a selected business topic, to be announced in advance.

**MKTG 492. Independent Study in Marketing. 1-3 Hours.**

Semester course; 1-3 credits. For marketing majors, a maximum total of 3 credits for all MKTG 492 courses. Prerequisites: MKTG 301, junior standing and permission of adviser and department chair prior to course registration. Intensive study or research under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

**MKTG 493. Internship in Marketing. 3 Hours.**

Semester course; 3 credits. Prerequisites: senior standing in the major offering the internship and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. Involves students in a meaningful experience in a setting appropriate to the major. Graded as pass/fail at the option of the department.

**Supply Chain Management and Analytics (SCMA)****SCMA 171. Mathematical Applications for Business. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 141 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Pre- or corequisite: INFO 162. Mathematics equivalency may be validated by a satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Formulation and solution of problems using a spreadsheet and algebra, mathematics of finance, matrices and introductory linear programming. Instruction will include spreadsheet use as a calculation and graphing tool.



**SCMA 212. Differential Calculus and Optimization for Business. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 171 or MATH 151 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Univariate and bivariate differential calculus and optimization of algebraic functions that model business phenomena. Students should take SCMA 212 immediately after completing SCMA 171. Students may not receive degree credit for both SCMA 212 and MATH 200.

**SCMA 301. Business Statistics I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 212 or MATH 200. Statistical methods for collection, visualization and analysis of business and economic data from populations and processes. Statistical thinking, concepts of variability, sampling, descriptive measures, contingency tables, probability and introduction to regression, correlation, confidence intervals and hypothesis testing. Students may receive credit toward graduation for only one of STAT 206, STAT 208, STAT 210, STAT 212, STAT 312 or SCMA 301.

**SCMA 302. Business Statistics II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 212 or MATH 200 and SCMA 301, STAT 210 or STAT 212. Statistical methods employed in the collection and analysis of business and economic data. Continuation of statistical inference for means and variable relationships using t-tests, analysis of variance, contingency tables, regression and correlation analysis with emphasis on problem formulation and interpretation of computational results.

**SCMA 303. Introduction to Analytics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 162; SCMA 212 or MATH 200; and SCMA 301, STAT 212 or STAT 210. Descriptive analysis (Excel models and pivot tables, summary statistics, data visualization and regression analysis), predictive analysis (time series and forecasting) and prescriptive analysis (optimization models, decision trees and sensitivity analysis).

**SCMA 320. Production/Operations Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 301, STAT 210 or STAT 212. This course is restricted to students who have completed at least 54 credit hours (junior standing). Discipline of management and the management process within the operations of an organization. Planning and controlling of operations through decision analysis, forecasting, aggregate planning, inventory management and quality management.

**SCMA 323. Legal Environment of Business. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: sophomore standing. Basic legal concepts applicable to business, including the legal aspects of operating a business, contracts, employment relationships, sales, bailments and commercial paper, along with ethical considerations and social and political influences. Students may not receive degree credit for both SCMA 323 and MGMT/ACCT 481.

**SCMA 325. Organizational Communication. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BUSN 225 or the equivalent. This course is restricted to students majoring in the School of Business who have completed at least 54 credit hours (junior standing). A study of interpersonal, team and organizational communication practices in modern dynamic work and virtual environments. This course includes dealing with written business messages, report writing, job-search techniques, nonverbal communication, oral presentations and intercultural communication. The focus will include both theoretical constructs and skill development.

**SCMA 329. Introduction to Intercultural Communication. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to the basic concepts, principles and skills for improving verbal and nonverbal communication with persons from different cultures. Using a cultural general approach, topics discussed include the concept of culture, barriers to intercultural communication, verbal communication process and nonverbal communication aspects. Appropriate for business and non-business majors.

**SCMA 339. Quantitative Solutions for Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 301, STAT 210 or STAT 212. This course is restricted to students who have completed at least 54 credit hours (junior standing). Modeling business-related problems using quantitative techniques. Focus is on applications to problems in the service and manufacturing sectors. Typical problem situations involve management of inventory, scheduling of people and processes and allocation of scarce resources.

**SCMA 350. Introduction to Project Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. Introductory exposure to and practice with the concepts of project management, the activities and skills of project managers, the prevalence of projects in organizations, and the value of project management skills for all managers. Students will employ project management terminology, participate in project work and engage in the appropriate technical and interpersonal processes for managing successful projects.

**SCMA 386. Introduction to Supply Chain Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Introduction to supply chains with emphasis on management, e-commerce and globalization. Topics covered include achievement of strategic fit among members of the chain; managing information system requirements; managing economies of scale, role of cycle inventory, impact of aggregation on risk and inventory; determining the optimal level of product availability, coordination and performance measurement.

**SCMA 427. Employment Law. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 323 or MGMT 331. This course is restricted to students who have completed at least 54 credit hours (junior standing). A survey of legislation and court and administrative-body decisions affecting the employer/employee relationship.

**SCMA 439. Introduction to Quality Management and Six Sigma. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 320. This course is restricted to students who have completed at least 54 credit hours (junior standing). Critical concepts of process management from quality management and Six Sigma; service quality; systems thinking; process improvement strategy and methods; fact-based decision-making; collection and use of data in improvement projects; introduction to data analysis tools and techniques; statistical process control.

**SCMA 440. Forecasting Methods and Process. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 302 or STAT 314. This course is restricted to students who have completed at least 54 credit hours (junior standing). An application-oriented presentation of forecasting process and forecasting methods to support planning and decision-making. Statistical forecasting methods are emphasized, including exponential smoothing, decomposition and regression. Also includes experience with computer software.



**SCMA 491. Topics in Supply Chain Management and Analytics. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. Students are restricted to a maximum total of 6 credits for all topics courses. Prerequisite: junior standing. An in-depth study of a selected business topic related to the disciplines in supply chain management and analytics, to be announced in advance.

**SCMA 492. Independent Study in Supply Chain Management and Analytics. 1-3 Hours.**

Semester course; 1-3 credits. Maximum total of 3 credits. Prerequisites: junior or senior standing as a major in a business curriculum and approval of adviser and department chair prior to course registration. Intensive study under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

**SCMA 493. Internship in Supply Chain Management and Analytics. 3 Hours.**

Semester course; 3 credits. Prerequisites: senior standing in the major offering the internship and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. Involves students in a meaningful experience in a setting appropriate to the major.

## School of Dentistry

### Dental Hygiene (DENH)

**DENH 301. Dental Hygiene Theory I. 5 Hours.**

Semester course; 2 lecture and 6 laboratory/clinical hours. 5 credits. Designed to familiarize the student with the scope, role and responsibilities of the dental hygiene profession. Topics include an introduction to the educational and therapeutic services as well as the philosophy of preventive oral health and its relevance to the practice of dental hygiene. Also introduces the clinical knowledge and skills needed to perform fundamental clinical dental hygiene procedures, instrumentation and preventive services.

**DENH 302. Dental Hygiene Theory II. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Continuation of DENH 301. Designed to provide the student with knowledge and skills necessary to provide patient care and includes instruction in some more advanced dental hygiene skills, including dental hygiene diagnosis, treatment planning, oral signs of abuse/neglect, topical medicaments and use of sonic and ultrasonic instrumentation.

**DENH 312. Community Oral Health Promotion. 2 Hours.**

Semester course; 2 lecture contact hours. 2 credits. Prerequisite: DENH 301. Enrollment restricted to students in the dental hygiene program. Introduces preventive oral health strategies, methods, materials and principles of instruction in health education and communication. Emphasizes oral health promotion as related to individual patients, community groups as well as professional peer-group presentations. Introduction to evidence-based decision-making in dental hygiene practice.

**DENH 327. Clinical Dental Hygiene I. 5 Hours.**

Semester course; 1 seminar and 12 laboratory/clinical hours per week. 5 credits. This course has two segments. The initial segment reinforces the knowledge and clinical skills learned in DENH 301. Additional laboratory experiences allow the student to re-assert technical skill proficiency prior to entry into the clinical education experience. The second segment introduces the clinical practicum and dental hygiene services as part of a comprehensive care model within the School of Dentistry. Students apply basic instrumentation and patient treatment skills in a clinical setting. Seminars provide opportunity for students to problem solve and critically discuss and assess clinical experiences.

**DENH 342. Nutrition. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Designed to provide students with an overview of the chemistry of the major nutrients as well as provide a practical approach to the concepts of nutrition. Emphasis will be placed on developing positive preventive health behaviors and providing nutritional education to dental patients in a clinical setting. The interrelationships of diet, nutrition and dental and systemic diseases will be discussed along with current food trends, consumer aspects of food choices and basic nutrition principles. A general review of dietary supplements also will be provided.

**DENH 401. Dental Hygiene Theory III. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Dental specialty content is presented: concepts and techniques in specialty areas that will enable the dental hygienist to consider implications for dental hygiene treatment planning with relation to periodontics, orthodontics, endodontics, preventive, cosmetic and restorative dentistry, pain control, oral surgery, prosthodontics, pediatric dentistry and implantology. Through case scenarios students develop treatment plans with regard to the dental hygiene process of care. Students discuss patient education needed for each phase of care appropriate for the informed consent of the patient.

**DENH 402. Dental Hygiene Theory IV. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. This course is designed to present the principles of dental practice, including dental team management strategies, business office management, increasing use of computers in dentistry, OSHA and its impact on practice management, insurance coverage for dental care, and employment opportunities and career options.

**DENH 407. Research Methods and Study Designs. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Designed to guide dental hygiene students in becoming competent in the use of scientific literature as a part of lifelong learning and evidence-based decision-making in patient care. Covers foundational materials in research design and biostatistics, including the development of testable hypotheses, data collection, data summary, and evaluation and interpretation of data found in scientific literature. Students will critique scientific literature from peer-reviewed journals and participate in reflection of current literature on assessment of patients with special needs. Students will also take part in an online Collaborative Investigator Training Initiative for protecting human subjects in research.

**DENH 411. Introduction to Public Health. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. This hybrid course is intended to provide the dental hygiene student with an overview of the broad field of public health. Topics include the sciences of public health, the controversial nature of public health, powers and responsibilities of the government, social and behavioral factors in health, environmental issues in public health, medical care and public health, and public health challenges in the upcoming century. The course serves as a foundation for DENH 412. The course will also provide students with experiences that foster positive attitudes and behaviors regarding their responsibility to care for underserved populations, thereby providing insights on the impact of social and economic factors on dental health. Field experiences place emphasis on special populations, including elementary school children; geriatric, institutionalized and hospitalized clients; and individuals with mental and/or physical disabilities. The course and its field experiences will prepare the dental hygienist for the role of dental public health practitioner, educator and consultant, as well as a resource person in community settings.

**DENH 412. Community Dental Health. 2 Hours.**

Semester course; 1 lecture and 3 clinical/service-learning project hours. 2 credits. This hybrid course is designed to provide dental hygiene students with an introduction and overview of basic concepts of dental public health, community dental health education and community program planning. Course topics include oral health trends, dental indices, water fluoridation, prevention and control of oral diseases in a community, and community dental health programs. Students become involved in the application of concepts such as program assessment, design, implementation and evaluation. This course will prepare the dental hygienist for the role of dental public health practitioner, educator, and consultant and resource person in community settings. Field experience is designed to prepare students to function in a variety of community health settings. Emphasis on special populations of elementary school children, geriatric, institutionalized, hospitalized and individuals with mental and/or physical disabilities.

**DENH 422. Current Issues, the Law and Ethics. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. This online course is designed to explore the ethics, jurisprudence and principles of dental hygiene practice. Students explore ethical issues and dilemmas in dental hygiene and health care delivery. This course strives to provide students with the foundations of ethical reasoning and decision-making in practices. The course fosters professional development and an understanding of the legal and ethical aspects of oral health care.

**DENH 437. Clinical Dental Hygiene II. 5 Hours.**

Semester course; 1 seminar and 12-15 clinical/laboratory hours. 5 credits. Prerequisite: DENH 327. A continuation of the clinical practicum; seminars and clinical experiences continue to prepare students to provide oral health care services in the private and public sector. Students participate in comprehensive care clinical experiences within the School of Dentistry as well as the specialty clinics via scheduled and supervised extramural rotations. Advanced dental hygiene procedures are initiated and patient assessment, management skills and self-assessment are emphasized. Skill development in dental hygiene procedures continues; patient management skills as well as decision-making and problem-solving in relation to patient assessment, treatment planning and evaluation are emphasized. Course sequence provides the student with the opportunity to use and further enhance the knowledge and skills of dental hygiene practice and procedures in a clinical model that emphasizes comprehensive patient care and a foundation for transference of those skills to the work environment in the private and public sector. Grade of PR required in DENH 437 for continuation in DENH 447.

**DENH 447. Clinical Dental Hygiene III. 5 Hours.**

Semester course; 1 seminar and 12-15 clinical/laboratory hours. 5 credits. Prerequisite: DENH 437 with a grade of PR. A continuation of the clinical practicum; seminars and clinical experiences continue to prepare students to provide oral health care services in the private and public sector. Students participate in comprehensive care clinical experiences within the School of Dentistry as well as the specialty clinics via scheduled and supervised extramural rotations. Advanced dental hygiene procedures are initiated and patient assessment, management skills and self-assessment are emphasized. Skill development in dental hygiene procedures continues; patient management skills as well as decision-making and problem-solving in relation to patient assessment, treatment planning and evaluation are emphasized. Course sequence provides the student with the opportunity to use and further enhance the knowledge and skills of dental hygiene practice and procedures in a clinical model that emphasizes comprehensive patient care and a foundation for transference of those skills to the work environment in the private and public sector.

**DENH 449. Clinics in Dental Hygiene. 1-5 Hours.**

Semester course; 1-3 credits. Clinical/laboratory experiences offering the opportunity to use and further develop the knowledge and skills of dental hygiene practice.

**DENH 450. Independent Study. 1-5 Hours.**

Semester course; 1-5 credits. Independent study projects planned to meet the learning objectives of the student.

**DENH 457. Clinical Service-learning. 1 Hour.**

Continuous course; 32 clinical sessions. 1 credit. Prerequisites: DENH 302, 327 and 342. Enrollment restricted to dental hygiene students only. Course must be repeated to fulfil requirements. (Requirement is for 32 clinical session over two semesters. Students will repeat for 2 credits.) This is a course-based, credit-bearing educational experience in which students participate in an organized service activity that meets community-identified needs. Students are assigned rotations in clinical practice settings in underserved areas, in which they are exposed to patients of varied ethnic, socioeconomic and demographic backgrounds, as well as special patient populations not typically encountered in the School of Dentistry clinics. While continuing clinical education, students have the opportunity to make oral health care more accessible to marginalized groups. Throughout this unique learning experience, students are exposed to the potential benefits of practice in public health dentistry. Students will reflect on the service activity to increase understanding and application of course content and to enhance a sense of civic responsibility. Students will also provide guided reflections on designated reading assignments. Graded P/F.

**DENH 460. Individual Plan of Study. 1-6 Hours.**

Semester course; variable hours. 1-6 credits. This course is designed on an individual basis to accommodate remediation of a failed course. The course director will design course material to include self-paced learning, assignments, tests and clinic or lab activities necessary to equal the failed course content. Graded as pass/fail.

**DENH 477. Special Topics in Dental Hygiene. 1-3 Hours.**

Semester course; 1-3 credits. Designed around the interests of students, faculty expertise and availability of educational resources. Format may include intensive mini-courses or workshops.

**Dental Special Topics (DENS)****DENS 101. INTRO TO DENTISTRY. 1 Hour.****DENS 433. GERIATRIC DENTISTRY. 1 Hour.****General Practice (GENP)****GENP 302. Dental Materials. 2 Hours.**

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Provides the scientific foundation for understanding the factors guiding the use of biomaterials in dentistry as they relate to the practice of dental hygiene. Dental and material science concepts are defined and their relationships developed to establish an understanding of the influence of material properties and manipulation on the longevity and success of treatment. Dental materials are discussed in terms of their physical, mechanical, chemical, biological and esthetic properties. Factors that influence tooth sensitivity, caries prevention, tissue irritation, longevity of restoration, dental bonding, materials selection and allergic reactions are emphasized. Primary dental materials will be discussed in relation to their properties and manipulation with an approach to aid in patient education and to recognize adverse affects on the patient's health from improper manipulation or placement failures.

**GENP 311. Oral Anatomy and Occlusion. 3 Hours.**

Short course; 2 lecture hours; 15-20 hours seminar/recitation and online discussion. 10 weeks. 3 credits. This course combines lecture with readings and research for online discussion and addresses the dental terminology and the crown and root morphology of the permanent dentition. Students become familiar with the basic principles of occlusion: how teeth occlude, the diverse occlusal classifications, the arrangement of teeth in the dental arches, and the relationship of the dental arches to one another with focus on review of the anatomy and function of masticatory muscles and the temporomandibular joints. The lecture portion of the course is devoted to the didactic aspects of learning tooth anatomy. The online portion of this course is devoted to the fundamentals of occlusion and making application of both course segments to the clinical environment.

**Oral Diagnostic Sciences (ORPT)****ORPT 301. Dental Radiology. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. This is an introductory course that covers radiation physics, radiation biology and geometrical principles as applied to radiology and radiographic anatomy. Students will study the radiographic anatomy of the head and neck and exposure and processing techniques for diagnostic radiographic examinations of the head and neck. Areas are covered with the intent to link these principles to the knowledge needed in clinical practice.

**ORPT 324. Oral Pathology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is designed to provide the student with a body of basic information on general and organ specific pathology. The purpose of the course is to enable the student to better recognize and interpret symptoms, signs and pathologic characteristics of organ, systemic and oral disease that will be encountered in practice. Included is study relating to the etiology, pathogenesis, prognosis, prevention and treatment of oral disease. Students will study the development, reactive and neoplastic conditions of the oral cavity with emphasis placed on the more commonly occurring diseases.

**Oral Surgery (ORSG)****ORSG 431. Management of the Medically Compromised Dental Patient and Medical Emergencies in the Dental Office. 2 Hours.**

Semester course; 2 lecture and 3 clinical/laboratory hours. 3 credits. Provides students with the knowledge and skills to provide safe and effective care for medically compromised patients. The student will have didactic and clinical experience in obtaining, recording and interpreting the findings of physical examination, obtaining and interpreting results of appropriate clinical laboratory and radiological examination, and communicating with other health care professionals. Instruction in physical evaluation provides the student with sufficient knowledge, judgment and skill to recognize normal findings as well as significant deviations from the normal. Didactic material includes a study of disease processes that affect the major organ systems of the body. In addition, students will have the opportunity to recognize and manage medical emergencies that can occur during dental treatment. Care for individuals with physical and mental disabilities will be presented with emphasis on the management of this special population in the general dental office.

## Periodontics (PERI)

### PERI 326. Periodontics I. 1 Hour.

16 lecture, 2 seminar and 2 clinical hours. 1 credit. Corequisites: ANAT 302, BIOL 209 or equivalent, MICR 365. This course introduces the fundamental concepts of periodontal disease necessary for proper patient assessment, diagnosis, prognosis and treatment planning. This course stresses the rationale and technical aspects of examination of the periodontal patient. Emphasis will be placed on the etiology of periodontal diseases, rationale and outcomes of treatment. This course features small-group exercises in lectures, seminars and clinical patient-based instruction.

### PERI 329. Periodontics II. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Second in the series of periodontics courses for dental hygiene students, this course provides the scientific basis to understand the pathology and etiological factors of periodontal diseases. In addition, topics related to periodontal therapy not provided elsewhere in the dental hygiene curriculum are addressed, including periodontal risk assessment and advanced periodontal therapy procedures.

## School of Education

### Adult Education (ADLT)

#### ADLT 402. How Adults Learn. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Overview of the adult as a learner. Topics include how and what adults learn, why adults participate in learning and major barriers to learning for adults. Implications for teachers/trainers of adults are explored.

### Educational Studies (EDUS)

#### EDUS 101. Teacher Cadet Program. 3 Hours.

Semester course; 3 hours. 3 credits. Open only to students concurrently enrolled through a Teacher Cadet program at a participating Virginia high school. Designed to provide an introduction and foundation for the teaching profession, including awareness of personal attributes related to education, learning and cognitive styles, student growth and development, history and trends in public education, basic instructional approaches and the structure and governance of public education. The program includes an extended clinical component.

#### EDUS 200. Education in American Society. 3 Hours.

Semester course; 3 lecture hours. 3 credits. An elective course for non-education majors, including those who may be exploring careers in education. An examination of the complex nature of our American educational system and various societal influences on that system. The course will include an exploration of some critical issues affecting the future of American education, on-site visits to educational institutions, and other field experiences in settings that will permit exploration of career options.

#### EDUS 300. Foundations of Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The historical, sociological and philosophical backgrounds of educational theories and practices. The aim of the course is to help the student develop a basic understanding of education in the modern world.

#### EDUS 301. Human Development and Learning. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of human development through the life span with special emphasis on child and adolescent psychology, the nature of learning, and basic concepts of learning theories.

#### EDUS 305. Educational Psychology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. The application of psychological principles to the teaching-learning process, with special emphasis on theories of learning and development. Crosslisted as: PSYC 305.

#### EDUS 400. Independent Study. 1-6 Hours.

Semester course; 1-6 hours. 1-6 credits. Opportunities are provided for supervised research and independent study in selected areas. Designed for advanced students. All work offered on an individual basis with the approval of instructor and departmental chair.

#### EDUS 476. Methods for Residence Hall Assistants. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: serve in VCU residence halls or permission of instructor. Course designed primarily to present resident assistants and others with student development concepts, peer assistance and helping skills, and group techniques. Residence halls will be used as primary learning laboratories.

#### EDUS 494. Topical Seminar in Education. 1-3 Hours.

Semester course; variable hours. 1-3 credits. May be repeated for a maximum of 6 credits. A seminar intended for group study by personnel interested in examining topics, issues or problems related to the teaching, learning and development of students.

### Reading and Study Skills (RDSS)

#### RDSS 100. Reading and College Study Skills. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A study of effective reading and study skills at the college-level. Emphasis is placed on vocabulary development as well as reading and study strategies.

#### RDSS 101. Advanced Reading, Study and Communication Skills. 3 Hours.

Semester course; 3 lecture and laboratory hours. 3 credits. Prerequisite: RDSS 100, adviser's recommendation, or instructor's permission. A study of advanced reading and study skills at the college-level. Students develop and apply critical reading-thinking skills, library research skills and advanced vocabulary.

### Special Education and Disability Policy (SEDP)

#### SEDP 330. Survey of Special Education. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Presents an overview of the historical basis and regulatory requirements related to special education, including the individual education program as a legal document and the rights and responsibilities of parents, teachers and schools. The characteristics of learners with disabilities and their educational and medical implications are also examined, as well as the cultural, familial and ethical issues involved.

### Teacher Education (TEDU)

#### TEDU 101. Introduction to Teaching. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Provides undergraduate students with an introduction to teaching and learning in elementary settings. Students will explore current educational reforms and their influences on elementary schools and students. Service-learning activities will enable students to gain firsthand experiences in urban elementary classrooms.

**TEDU 203. Focus on Choice. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for a maximum of 3 credits. A career planning experience for adults focusing on discontinuity in life patterns and a review of current educational and occupational opportunities. Consideration of the world of work, fields of education and volunteer service, and the development of one's own potential will be featured.

**TEDU 310. Elementary School Practicum A. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Corequisites: TEDU 410, TEDU 414 and TEDU 426. Restricted to students admitted to the Extended Teacher Preparation Program. A field placement that precedes student teaching/internship. Includes planned observations, tutorials and small-group involvement. Graded pass/fail.

**TEDU 311. Middle School Practicum. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Corequisite: TEDU 537. Restricted to students admitted to the Extended Teacher Preparation Program. A field placement that precedes student teaching/internship. Includes planned observations, tutorials and small-group involvement. Graded pass/fail.

**TEDU 312. High School Practicum. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Pre- or corequisite: TEDU 311; corequisite: TEDU 540, 545, 547 or 548. Restricted to students admitted to the M.T. program with concentrations in secondary education. A field placement that precedes student teaching/internship. Includes planned observations, tutorials and small-group involvement. Course graded as pass/fail.

**TEDU 313. Elementary School Practicum B. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: TEDU 310; corequisites: TEDU 517, TEDU 522 and TEDU 591. Restricted to students admitted to the M.T. program with a concentration in early and elementary education. A field placement that precedes student teaching/internship. Includes planned observations, tutorials and small-group and whole class involvement.

**TEDU 386. Children's Literature I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. Designed to give students an appreciation of children's literature; includes biography, fable, myth, traditional and modern fanciful tales and poetry, as well as a survey of the history of children's literature. Crosslisted as: ENGL 386.

**TEDU 387. Literature for Adolescents. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. Designed to acquaint the prospective middle and secondary school English teacher with the nature, scope and uses of adolescent literature. The student is acquainted with reading materials for meeting the varied needs and interests of adolescents. Crosslisted as: ENGL 387.

**TEDU 389. The Teaching of Writing Skills. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Studies the theory and methods for teaching writing to students in middle and secondary schools. Teaches strategies for prewriting, composing, peer revision, evaluation and topic construction. Includes extensive journal and essay writing. Crosslisted as: ENGL 389.

**TEDU 390. Physical Education for the Elementary Teacher. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Methods and curriculum planning in physical education for the elementary school teacher and physical education specialist. Emphasis is placed on using activities and games to foster the growth and development of the child with a focus on the psychomotor and affective domains.

**TEDU 400. Independent Study. 1-6 Hours.**

Semester course; 1-6 hours. 1-6 credits. Opportunities are provided for supervised research and independent study in selected areas. Designed for advanced students. All work offered on an individual basis with the approval of instructor and departmental chair.

**TEDU 410. Classroom Management in Elementary Schools. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Designed to help students develop their understanding of effective classroom management techniques. Students will examine management models and research and evaluate antecedent factors of a management scheme such as their philosophy of education, management style, learning styles and school and classroom climate.

**TEDU 411. Integrating the Arts in Curriculum for Young Children. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Provides pre-service teachers with an understanding of how experiences in visual art, music, drama and movement can be used to support the growth and development of children ages 3 to 8. Students will learn of the importance of all of the arts for children's cognitive, socio-emotional and psychomotor development. Emphasis will be given to integrating developmentally appropriate experiences in the arts into early childhood curriculum.

**TEDU 414. Curriculum and Methods for Early/Elementary Children. 4 Hours.**

Semester course; 4 lecture hours. 4 credits. Prerequisite: admission to teacher preparation program. Corequisites: TEDU 310 (Practicum A) and 426. A study of developmentally appropriate curriculum and methods for early/elementary children, including diversity, assessment, behavior guidance and management, planning instruction and creating positive learning environments. Includes an overview of the history of early/elementary education and issues currently facing the profession.

**TEDU 426. Teaching Reading and Other Language Arts. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Presents teaching strategies and materials in reading and the other language arts based on current theory and research. Emphasizes the interrelatedness of listening, speaking, reading and writing and the importance of naturalistic language experiences.

**TEDU 485. Directed Student Teaching I. 6 Hours.**

6 credits. Prerequisites: admission to TEDU 310 or equivalent with a minimum grade of C, recommendation of practicum supervisor and passing score on the VCLA test. A classroom teaching experience in a public school or other approved setting, which includes opportunities for increasing involvement with children. Culminates in full responsibility for planning, implementing and evaluating classroom activities.

**TEDU 486. Directed Student Teaching II. 6 Hours.**

6 credits. Prerequisites: admission to TEDU 310 or equivalent with a grade of C or better and recommendation of practicum supervisor. A classroom teaching experience in a public school or other approved setting, which includes opportunities for increasing involvement with children. Culminates in full responsibility for planning, implementing and evaluating classroom activities.

**TEDU 494. Topical Seminar in Education. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for a maximum of 6 credits. A seminar intended for group study by personnel interested in examining topics, issues or problems related to the teaching, learning and development of students.



## School of Engineering

### Biomedical Engineering (EGRB)

#### **EGRB 101. Biomedical Engineering Practicum I. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: registration in biomedical engineering department and permission of course coordinator. This course involves the introduction of clinical procedures and biomedical devices and technology to biomedical engineering freshmen. Students will tour medical facilities, clinics and hospitals and will participate in medical seminars, workshops and medical rounds. Students will rotate among various programs and facilities including orthopaedics, cardiology, neurology, surgery, otolaryngology, emergency medicine, pharmacy, dentistry, nursing, oncology, physical medicine, ophthalmology, pediatrics and internal medicine.

#### **EGRB 102. Introduction to Engineering. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: registration is restricted to biomedical engineering majors only. Introduces basic engineering principles in the context of biomedical topics, including electrical circuits and components such as resistors, capacitors, diodes, transistors, digital electronics and motors. Applications of biomedical systems including heart function, brain waves, human motion and skin responses are discussed. The laboratory introduces fundamental biomedical circuit testing and measurement and proper laboratory writing, with students required to analyze, build and test biomedical devices such as those involving ECG, EMG and Galvanic Skin Response.

#### **EGRB 105. History of Medical Technology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Origins and recent advances in medical technologies including hearing aids, artificial knees, heart-lung machines, medical anesthesia devices and medical imaging systems such as CAT MRI.

#### **EGRB 203. Introduction to Biomechanics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 201 and PHYS 207. Restricted to biomedical engineering majors only. The theory and application of engineering mechanics applied to the design and analysis of rigid and deformable biomedical and physiological structures. The study of forces and their effects, including equilibrium of two- and three-dimensional bodies, stress, strain and constitutive relations, bending, torsion, shearing, deflection, and failure of physiological and biomedical systems.

#### **EGRB 215. Computational Methods in Biomedical Engineering I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 201 and sophomore standing in biomedical engineering. Corequisite: MATH 301, MATH 310 or permission of instructor. The goal of this course is to enhance students' software skills for subsequent biomedical engineering courses and laboratories, as well their careers. The course covers the basic fundamentals of programming in MATLAB, as well as data analysis of biomedical data. An important component of this course is developing problem-solving skills.

#### **EGRB 301. Biomedical Engineering Design Practicum. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRB 101, EGRB 102, EGRB 203, EGRB 215, EGRE 206 (or equivalent), each with a minimum grade of C. Restricted to students with junior standing in the biomedical engineering program. Explores the professional and ethical responsibilities of a biomedical engineer. Emphasis will be placed on design issues associated with biomedical engineering, teamwork, regulatory issues and human and animal subjects.

#### **EGRB 303. Biotransport Processes. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHIS 309, 310 (or equivalents); EGRB 203; and PHYS 207. Course involves the study of mass, momentum and heat transfer within the human body, between the human body and the environment, and in the design of devices and systems that are involved with transport processes in medical and clinical settings. The underlying principles of mass, momentum and energy transfer will be addressed followed by a study of such processes that are ongoing in the human body. The design of biomedical devices and systems that involve transport processes also will be studied. Examples include cardiovascular blood flow, transport across cell membranes, respiration and thermoregulation.

#### **EGRB 307. Biomedical Instrumentation. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 206, EGRB 215. A study of the physical principles, design and clinical uses of biomedical instrumentation. Analysis and design of low frequency electronic circuits, which are most frequently used in biomedical instruments, will be conducted. Analysis of biosensors, biopotential electrodes, the measurements of biopotential signals including electrocardiogram (ECG), electroencephalogram (EEG) and electromyogram (EMG), blood pressure, blood flow, and respiratory system will be conducted. Laboratory work on basic biomedical electronics and instrumentation will be performed.

#### **EGRB 308. Biomedical Signal Processing. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: MATH 301 and 310; PHIS 309 and 310; EGRB 215. Explores the basic theory and application of digital signal processing techniques related to the acquisition and processing of biomedical and physiological signals including signal modeling, AD/DA, Fourier transform, Z transform, digital filter design, continuous and discrete systems.

#### **EGRB 310. Biomechanics. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRB 203, EGRB 215, PHIS 309 and PHIS 310. Corequisites MATH 301 and MATH 310. A study of the forces, stresses and strains in the human body during normal function. Emphasis is placed on the mechanics of various components of the body including hard (bone) and soft (skin, vessels, cartilage, ligaments, tendons) tissues from a structure-function perspective. Stress and strain relationships for these biomaterials will be analyzed based upon the fundamentals of engineering mechanics. In addition, the distinctive features of biological materials will be studied with respect to their differences from nonliving materials and elaborated upon in laboratory exercises using material evaluation protocols.

#### **EGRB 315. Computational Methods in Biomedical Engineering II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRB 215, MATH 301 and MATH 310. The goals of this course are to: (1) prepare software skills for using LabVIEW for collecting real-time data from sensors, process information and control actuators and (2) prepare mechanical design skills using SolidWorks for designing structures and mechanisms, as well as performing simple analyses for assessing mechanical design criteria.

**EGRB 401. Biomedical Engineering Senior Design Studio. 3 Hours.**

Semester course; 9 laboratory hours. 3 credits. Prerequisites: EGRB 301, EGRB 303, EGRB 307, EGRB 308, EGRB 310, EGRB 315 and EGRB 427, each with a minimum grade of C. Enrollment restricted to students with senior standing in the Department of Biomedical Engineering or by permission of instructor. A minimum of nine laboratory hours per week is dedicated to the design, development and execution of the senior design (capstone) project for biomedical engineering under the direction of a faculty research adviser in biomedical engineering or an acceptable substitute as determined by the course coordinator. Tasks include team meetings (for team projects), brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects. Monthly progress reports are due to the research adviser and course coordinator. At the end of the first semester, each team will orally present to the BME faculty project background information and discuss potential technical approaches and deliverables.

**EGRB 402. Biomedical Engineering Senior Design Studio. 3 Hours.**

Semester course; 9 laboratory hours. 3 credits. Prerequisites: Completion of EGRB 401 with a minimum grade of C. A minimum of nine laboratory hours per week is dedicated to the design, development and execution of the senior design (capstone) project for biomedical engineering under the direction of a faculty research adviser in biomedical engineering or an acceptable substitute as determined by the course coordinator. Tasks include team meetings (for team projects), brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects. Monthly progress reports are due to the research adviser and course coordinator. Final project reports must be submitted before the end of the semester. All design teams must participate in the School of Engineering public poster session. At the end of the semester and conclusion of the two-semester design process, teams must present their final designs and deliverables before the BME faculty.

**EGRB 403. Tissue Engineering. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: junior standing in engineering and PHIS 309 and 310, or permission of instructor. Study of the design, development and clinical application of tissue engineered components for use in the human body. Analysis of biology, chemistry, material science, engineering, immunology and transplantation as pertains to various tissue engineered components including blood vessels, bone, cartilage, pancreas, liver and skin.

**EGRB 405. Finite Element Analysis in Solid Mechanics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRB 310 and MATH 301. Finite element analysis as presented in this course is a numerical procedure for solving continuum mechanics problems that cannot be described by closed-form mathematical solutions. Emphasis will be placed on understanding the theoretical basis for the method, using a commercial software program, and understanding the volume of information that can be generated. Applications to both one- and two-dimensional problems in solid mechanics and biomechanics will be explored.

**EGRB 406. Artificial Organs. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHIS 309 and PHIS 310 (or equivalents), EGRB 303, 307 and 310, or permission of instructor. This course explores the design, operating principles and practices regarding artificial organs and their use in the human body. Analysis of dialysis systems for kidney replacement, artificial hearts and heart assist devices, cardiac pacemakers, sensory organ assist and replacement devices, and artificial liver and pancreas devices. Design aspects, legal ramifications, regulatory issues and clinical implantation issues will be addressed.

**EGRB 407. Physical Principles of Medical Imaging. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: junior standing in the School of Engineering and PHYS 208. A study of the physical principles and basic clinical uses of medical imaging. Analysis of radiation and interaction of radiation, generation and control of X-rays, X-ray diagnostic methods, X-ray computed tomography (CT), magnetic resonance imaging (MRI) and ultrasonic imaging will be conducted. Basic principle of radionuclide imaging also will be introduced.

**EGRB 408. Advanced Biomedical Signal Processing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRB 308. This course will briefly review the basic theory of discrete-time signal processing techniques in biomedical data processing. Advanced signal processing techniques including adaptive signal processing, wavelets, spectral estimation and multirate signal processing will be employed. Specific examples utilizing electrocardiogram (ECG) and other biological signals are provided. Topics covered are alternance phenomenon in biological systems, late potential in ECG, intrapotential in ECG and coherence analysis.

**EGRB 409. Microcomputer Applications in Biomedical Engineering. 3 Hours.**

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: EGRB 307. Covers microcomputer applications (hardware and software) as applied to biomedical science and biomedical engineering. Basic hardware components of a microcomputer are discussed with particular reference to configurations needed for analyzing biomedical events. Software applications including data encoding, data storage, graphical interfaces and real-time processing are explored for analysis of physiological and biomedical signals. Students will develop algorithms using LabView and MatLab to solve problems in biomedical engineering in the laboratories.

**EGRB 410. Cellular Engineering. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHIS 309 and PHIS 310, both with minimum grades of C. This course will be a detailed study of the structure and function of the cell from an engineering perspective. Fundamental molecular biology, cell biology and biochemistry topics (cellular structure, signal transduction, cell adhesions, cytoskeleton) will be introduced. Engineering principles (kinetics, transport, mechanics, thermodynamics, electrochemical gradient) will be applied to these topics. Emphasis is placed on methods to disrupt, enhance or mimic in vivo cellular function in biomedical applications.

**EGRB 411. Cell Mechanics and Mechanobiology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRB 310 and EGRB 410 with minimum grades of C or permission of instructor. Focusing on cellular-extracellular matrix interactions, students will gain a quantitative understanding of the way cells detect, modify and respond to the physical properties within the cell environment. Coverage includes the mechanics of single-molecule polymers, polymer networks, two-dimensional membranes, whole-cell mechanics and mechanobiology. Mechanobiology topics include cancer and development, pulmonary system, cardiovascular system, and the nervous system. Students will gain understanding of techniques in cellular manipulation and quantification of cellular forces.

**EGRB 412. Regenerative Engineering and Medicine. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRB 410 or equivalent with minimum grade of C. Students will apply fundamental concepts of cell and molecular biology, biochemistry, medicine and pathology, as well as material science and engineering principles to design novel strategies for cell and drug delivery, tissue engineering and regenerative medicine. Emphasis will be placed on designs and methods to solve current complex biomedical problems.

**EGRB 413. Computational and Experimental Models of Cellular Signal Transduction. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRB 215 and EGRB 410 with minimum grades of C. Students will study the process by which an extracellular protein binding event is transduced and interpreted as an incoming signal into a cell. Students will learn the biology of cellular signal transduction and will also learn how to apply computational models and experimental techniques to predict and investigate these pathways. Students will follow the course of a protein within a signal transduction cascade, from binding to a receptor, activating intracellular pathways, inducing new transcription and translation and targeting of the protein to its final location. Students will develop MATLAB-based mathematical models to predict signal transduction dynamics, and then will study experimental techniques that are used to both disrupt and measure signal transduction.

**EGRB 420. Rehabilitation Engineering. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHIS 309 and PHIS 310 (or equivalents), EGRE 206 (or equivalent) and EGRB 310, or permission of instructor. This course explores the principles and practices regarding rehabilitation engineering and the interaction of biomedical engineering with health care delivery to individuals who are disabled. It will cover the three main areas of rehabilitative engineering: assistive technology, prostheses and rehabilitation therapy devices. Design will be an important component of the course.

**EGRB 421. Human Factors Engineering. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHIS 309 and PHIS 310 (or equivalents), and EGRB 310. This course explores the principles and practices regarding ergonomics and human factors engineering and the interaction of biomedical engineering with human function. Analysis of the functions of the human body regarding motion, sensory mechanisms, cognition and interaction with the environment will be included. Interactions of the human body with technology, workplaces, equipment and computers will be examined. Design of workplaces for optimal human performance will be discussed. Analysis of the design and arrangement of controls and displays will be covered.

**EGRB 427. Biomaterials. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: junior standing in biomedical engineering, PHIS 309 and 310, or permission of instructor. Principles of materials science as it relates to the use of materials in the body. Characterization of biomaterials. Study of the properties of biomedical materials used as implants, prostheses, orthosis and as medical devices in contact with the human body. Analysis of physical, chemical, thermal and physiological response factors associated with materials and implant devices used in the human body.

**EGRB 491. SPECIAL TOPICS. 3 Hours.****Chemical and Life Science Engineering (CLSE)****CLSE 101. Introduction to Engineering. 3 Hours.**

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisites: course open to first-year students majoring in chemical and life science engineering. Introduction to chemical and life science engineering. Topics covered include ethics and social responsibility; engineering design process; engineering solutions; estimations and approximations; dimensions, units and conversions; mathematics and computer solutions; life-long learning; introduction to the interface between engineering, biology and medicine.

**CLSE 102. Methods in CLSE. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: CLSE 101. An introduction to problem formulation and solution methods for chemical and life science engineering. Typical chemical and life science engineering scenarios will be presented. Emphasis will be placed on identifying and formulating problems based on presented scenarios.

**CLSE 115. Introduction to Programming for Chemical and Life Science Engineering. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: MATH 200. Introduction to the concepts and practice of structured programming. Topics include problem-solving, top-down design of algorithms, objects, basic syntax, control structures, functions and arrays.

**CLSE 201. Chemical Engineering Fundamentals I: Material Balances. 4 Hours.**

Semester course; 3 lecture and 1 recitation hours. 4 credits. Prerequisites: CLSE 115, CHEM 102 and MATH 201. The first of two introductory chemical and life science engineering courses. Covers material balances on steady-state chemical processes.

**CLSE 202. Chemical Engineering Fundamentals II: Energy Balances and Engineering Thermodynamics. 4 Hours.**

Semester course; 3 lecture and 1 recitation hours. 4 credits. Prerequisites: CLSE 201 with a minimum grade of C, CHEM 101-102 and MATH 200-201 or equivalents. The second of two introductory chemical and life science engineering courses. Covers energy balances on steady-state chemical processes, computer-aided balance calculations, balances on transient processes and introduction to thermodynamics.

**CLSE 301. Transport Phenomena I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLSE 202, PHYS 208 and MATH 301. Basic concepts of transport phenomena as applied to chemical and life science engineering. Topics include transport of mass momentum and energy in single and multidimensions.

**CLSE 302. Transport Phenomena II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLSE 301 and 305. Concepts of transport phenomena as applied to chemical and life science engineering. Topics include advanced multicomponent, multiphase systems, integral analysis, and an integrated view of momentum, heat and mass transport in unit operations.

**CLSE 305. Thermodynamics of Phase Equilibria and Chemical Reactions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLSE 115, 201, and 202, MATH 307. Thermodynamic properties of fluids and mixtures, partial molar quantities, phase equilibria, activity coefficients and correlations, equations-of-state, chemical reaction equilibria for liquid, vapor and multiphase reactions, and the use of equations-of-state and activity/fugacity correlations to obtain the thermodynamic functions required for the calculation of chemical reaction equilibrium constants. Computing using Excel VBA are a required component of this course.

**CLSE 306. Industrial Applications of Inorganic Chemistry. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 302 and CHEZ 302. A study and analysis of the most important industrial applications of inorganic chemistry, with emphasis on structure/properties correlation, material and energy balances, availability and logistics of starting materials, economic impact and environmental effects. Crosslisted as: CHEM 306.

**CLSE 312. Chemical Reaction Engineering. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLSE 301 and 305. Introduces the student to the analysis of reactors via coupling of empirical reaction rates and thermodynamic constraints with reactor material and energy balances. The behavior of the ideal reactor types (batch, CSTR and PFR) is emphasized with attention given to departure from these ideals by real systems.

**CLSE 320. Instrumentation Laboratory. 2 Hours.**

Semester course; 6 laboratory hours. 2 credits. Prerequisites: CLSE 301 and CLSE 305. This laboratory introduces students to a variety of measurement instruments used in modern chemical engineering laboratories and process plants. Detailed laboratory reports are required for each of the experiments undertaken by the students.

**CLSE 325. Bioengineering. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLSE 201 and BIOL 151 or BIOL 152. An introductory and survey level course required for all chemical engineering students. This course introduces concepts and principles of chemical engineering to problems and issues in the life sciences, biotechnology and medicine. Students apply heat and mass transfer concepts, separations and controls to topics that include clinical diagnostics, bioanalytical instrumentation, biosensors and biochips, bioprocess engineering including fermentation, biochemical pathway engineering, protein folding and aggregation, bioreactors and tissue engineering.

**CLSE 402. Senior Design Studio I (Laboratory/Project Time). 2 Hours.**

Semester course; 6 laboratory hours. 2 credits. Prerequisites: senior standing in chemical and life science engineering and participation in a senior design (capstone) project; CLSE 301, 302, 305 and 312. A minimum of six laboratory hours per week dedicated to the execution phase of the senior design (capstone) project, which should meet appropriate engineering standards and multiple realistic constraints. Tasks include team meetings, brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects.

**CLSE 403. Senior Design Studio II (Laboratory/Project Time). 2 Hours.**

Semester course; 6 laboratory hours. 2 credits. Prerequisites: senior standing in chemical and life science engineering and participation in a senior design (capstone) project; CLSE 402. A minimum of six laboratory hours per week dedicated to the execution phase of the senior design (capstone) project, which should meet appropriate engineering standards and multiple realistic constraints. Tasks include team meetings, brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects.

**CLSE 405. Process Synthesis. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLSE 302, 305 and 312. A senior technical elective. Students synthesize flowsheets for existing and newly proposed chemical and biochemical products. Quantitative tools learned in earlier courses are used to examine the technical and economic feasibility of the flowsheets. Written bi-weekly status reports are required from each student and each student completes a process synthesis and analysis as a semester project.

**CLSE 409. Process Control in Chemical and Life Science Engineering. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLSE 301 and 305. Covers process control as applied to chemical and life science engineering with many practical examples. Topics include time and frequency domain analysis, multivariable processes and applications to chemical and biochemical production and processing.

**CLSE 428. Introduction to Polymer Science and Engineering. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLSE 302, 305 and 312, and CHEM 302, or equivalents. A senior technical elective. The course offers an introduction to the chemistry, physical properties and processing of polymers. Topics include step and chain polymerization, structure/property relationships, mechanical properties of plastics and elastomers, solution properties, methods for polymer characterization, and processing techniques.

**CLSE 440. Unit Operations Laboratory. 2 Hours.**

Semester course; 6 laboratory hours. 2 credits. Prerequisites: CLSE 302, 305 and 312. Students carry out experiments with chemical and biochemical reactors, energy exchangers, fluid flow networks and other unit operations. Detailed laboratory reports are required for each of the experiments undertaken.

**CLSE 450. Undergraduate Research in Chemical and Life Science Engineering. 1-6 Hours.**

Semester course; variable hours. Up to 6 credits. Undergraduate research under the supervision of a faculty member. Specific topics vary depending on the interests of the student and the adviser. Registration requires approval of the student's academic adviser and research adviser.

**CLSE 460. Undergraduate Honors Research in Life Sciences Engineering. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Corequisites: BIOL 218, CLSE 302. An undergraduate honors research course for academically talented juniors and seniors requiring advanced work and an honors thesis on a topic relevant to life sciences engineering. Topics and credit hours will be chosen in consultation with a sponsoring faculty member.



**CLSE 461. Stem Cell Engineering. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 218, CLSE 302. The production and behavior of adult and embryonic stem cells are studied and potential applications for the treatment of disease are surveyed. Stem cell engineering techniques including parthenogenesis, nuclear transfer stem cells and embryonic carcinoma cells are introduced. The use of stem and germ cells for cloning is covered, and ethical considerations involving the use of embryonic human stem cells are discussed.

**Computer Science (CMSC)****CMSC 101. Introduction to Computer Science. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 141 or the equivalent with a minimum grade of C. An introduction to the work of computer scientists, including an overview of current research and application areas as well as career opportunities. Topics include problem-solving, the basics of computer organization, the software engineering life cycle, research resources and social and ethical aspects of technology. Additional topics also include binary, hexadecimal, two's complement, floating point representation, ASCII and Unicode.

**CMSC 191. Topics in Computer Science. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated for credit. Prerequisite: permission of the instructor. This course will teach selected topics in computer science. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**CMSC 245. Introduction to Programming Using C++. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 151 or satisfactory score on the Mathematical Placement Test. Students registering for CMSC 245 must have taken the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case in which the stated alternative prerequisite course has been completed at VCU. Students are expected to have fundamental computer skills. Introduction to the concepts and practice of structured programming using C++. Problem-solving, top-down design of algorithms, objects, basic C++ syntax, control structures, functions and arrays. This course is intended for engineering majors.

**CMSC 246. Advanced Programming Using C++. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 245. Advanced programming in C++. Topics include program design, objects, classes, inheritance, files, strings, linked lists, stacks, queues, binary trees, recursion, and basic searching and sorting techniques. This course is intended for engineering majors.

**CMSC 255. Introduction to Programming. 4 Hours.**

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: calculus-level placement on the VCU Mathematics Placement Test within the one-year period immediately preceding enrollment in the course, or MATH 151 or equivalent. Students are expected to have fundamental computer skills. Introduction to object-oriented programming using Java. Topics include problem-solving, top-down design of algorithms using control structures, methods, arrays, basic I/O, basic concepts of objects and classes in Java, Java classes for manipulating strings, and introduction to program testing, UML notation and integrated development environments. Students may not receive credit for both CMSC 255 and INFO 250.

**CMSC 256. Data Structures and Object Oriented Programming. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 255 with a minimum grade of C; corequisite: CMSC 302. Advanced programming using Java. Topics include introduction to object-oriented design, inheritance, polymorphism, exceptions, interfaces, linked lists, stacks, queues, binary trees, recursion, and basic searching and sorting techniques. Continued focus on program testing and UML notation. Students may not receive credit for both CMSC 256 and INFO 350.

**CMSC 257. Computer Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 256 with a minimum grade of C. Topics include UNIX essentials; system programming in C; machine-level representation and organization of programs/data, arrays and pointers; types, structs and unions; strings; bit/byte operations; memory management; shell programming; input/output, including file handling; debugging; signals; network programming using sockets; program concurrency using forks and threads; experiments on program performance and optimization techniques.

**CMSC 302. Introduction to Discrete Structures. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 255 with minimum grade of C. Combinatorial and sequential circuits, algorithms and algorithm analysis, recursion, recurrence relations, graphs, trees.

**CMSC 303. Introduction to the Theory of Computation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 302 or the equivalent with a grade of C or better. Complexity classes, grammars, automata, formal languages, Turing machines, computability.

**CMSC 311. Computer Organization. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 302 with minimum grade of C; corequisite: CMSC 257. Introduction to the basic organization of computers including elementary digital logic design, processor and arithmetic/logic unit design, data paths, memory hierarchy, I/O devices, instruction set architecture and addressing modes.

**CMSC 312. Introduction to Operating Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 311 or EGRE 364. Computer systems design, I/O processing, secondary memory organization, command languages, memory management and job scheduling. Students will work in teams to design and implement an operating system simulation.

**CMSC 355. Software Engineering: Specification and Design. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 256 or EGRE 246, either with a minimum grade of C. Provides an overview of the software engineering process and software life-cycle models. Gives a detailed study of the analysis, specification and design phases. Students will work in teams to gain experience in software development methodology, developing specification and design documents and developing a prototype.

**CMSC 391. Topics in Computer Science. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated for credit. Prerequisite: permission of the instructor. This course will teach selected topics in computer science. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.



**CMSC 401. Algorithm Analysis with Advanced Data Structures. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 256 with a grade of C or better and CMSC 302 with a grade of C or better. Introduction to algorithm analysis and complexity classes. Advanced data structures topics including multiple linked lists, height-balanced trees, B-trees, hashing and graph representation; incorporating data structures into object-oriented design. Analysis of various searching and sorting algorithms. Algorithm design topics include divide-and-conquer, dynamic programming and greedy methods.

**CMSC 403. Programming Languages. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 256 with a grade of C or better and CMSC 303. Survey of representative modern programming languages. Formal definition of programming languages including specifications of syntax and semantics. Precedence, infix, prefix and postfix notation. Global properties of algorithmic languages. Sub-routines, co-routines and tasks. List processing, string manipulation, data description and simulation languages. Run-time representation of program and data structures.

**CMSC 404. Compiler Construction. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 401 and 403. A first course in compiler theory and construction. Formal description of languages, underlying theory and design techniques for compilers, lexical analysis, syntax analysis, syntax-directed translation, intermediate languages, run-time system management, code generation, code optimization, compiler-building tools.

**CMSC 409. Artificial Intelligence. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 401 with a minimum grade of C and MATH 310. Covers problem spaces, problem-solving methods, game playing, knowledge representatives, expert systems, natural language understanding.

**CMSC 411. Computer Graphics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 355 and MATH 310. Presents mathematical techniques for graphic development and transformation, curve and surface approximation and projections, graphical languages and data structures and their implementation, graphic modeling.

**CMSC 412. Social Network Analysis and Cybersecurity Risks. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 401 with a minimum grade of C. Covers network models, link prediction and analysis, centrality measures, random networks, power-laws and preferential attachment, small world phenomenon and decentralized search, community structure, information propagation in networks, and security and privacy issues in OSNs.

**CMSC 413. Introduction to Cybersecurity. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 401 with a minimum grade of C. This course provides introduction and basic concepts of computer security, cyber attacks, cyber defense, cyber forensics and cyber ethics.

**CMSC 414. Computer and Network Security. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 401 with a minimum grade of C. Corequisite: CMSC 312. This course covers the best practices of computer systems and network security. Key topics include security architecture, cryptographic systems and security management tools.

**CMSC 415. Introduction to Cryptography. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 401 with a minimum grade of C. This course provides a rigorous and theoretical introduction to modern cryptography. Key topics include symmetric key encryption and authentication, public key encryption, and digital signatures.

**CMSC 416. Introduction to Natural Language Processing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 401 with a minimum grade of C. Covers rule-based and statistical methods for creating computer programs that analyze, generate and understand human language. Topics include regular expressions and automata, context-free grammars, probabilistic classifiers, and machine learning. Word-level, syntactic and semantic processing are all considered. Application to real-world problems such as spell-checking, Web search, automatic question answering, authorship identification and developing conversational interfaces.

**CMSC 420. Software Engineering: Project Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 355 with a minimum grade of C. Study of the logistics of team software development. Students work in teams to gain experience in software management and develop the components of a larger software product. Topics include risk management, project planning, quality management, configuration management and software testing.

**CMSC 451. Senior Project. 3 Hours.**

Semester course; 3 laboratory hours. 3 credits. Prerequisites: senior standing in the computer science department; 24 credits in computer science, including CMSC 355 and CMSC 508, both with minimum grades of C; UNIV 200 or HONR 200 or equivalent. Capstone project or experience for the computer science major; research and presentation methods in computer science. Each student will participate, either individually or as part of a team, in a project or other experience approved by the course coordinator or sponsored by another computer science faculty member. Each student will write and revise a research paper on a technical topic associated with his or her project or experience. Students will submit a detailed written description of their proposed project or experience and will present orally some aspect of what they have learned and/or done during the semester. (This course cannot be counted as upper-level CMSC electives for students graduating under bulletins prior to 2008-09.).

**CMSC 452. Senior Project. 3 Hours.**

Semester course; 1 lecture and 2 laboratory hours. 3 credits. Prerequisites: senior standing in the computer science department; CMSC 451 with a minimum grade of C. Capstone project or experience for the computer science major; research and presentation methods in computer science; ethical, legal and social issues in computing; and professional responsibilities of computer scientists. Each student will participate, either individually or as part of a team, in a project or other experience approved by the course coordinator or sponsored by another computer science faculty member. Each student will write and revise a research paper on a technical topic associated with his or her project or experience. Students must continue on the same project that was started in CMSC 451. A final project report and presentation, which will include a discussion of associated legal, social and/or ethical issues, are due at the conclusion of the two-semester project or experience. (This course cannot be counted as upper-level CMSC electives for students graduating under bulletins prior to 2008-09.).

**CMSC 491. Topics in Computer Science. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for credit with different content. Prerequisite: permission of instructor. This course will cover selected topics in computer science. See the Schedule of Classes for specific topics to be offered each semester.

**CMSC 492. Independent Study. 2-4 Hours.**

Semester course; variable hours. 2, 3 or 4 credits per semester. Maximum 4 credits per semester; maximum total of 6 credits. Generally open only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration of the course. The student must submit a proposal for investigating some area or problem not contained in the regular curriculum. The results of the student's study will be presented in a report.

**CMSC 493. Computer Science Internship. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for up to 3 credits. Prerequisites: CMSC 401 and CMSC 403. Approval of Computer Science Undergraduate Credentials Committee is required prior to registration. A minimum of 30 clock hours per credit in an information technology environment. The internship is designed to provide practical experience in the computing industry. Student must present a written report reflecting upon internship experience. Graded as pass/fail. Not applicable toward the computer science major.

## Electrical and Computer Engineering (EGRE)

**EGRE 101. Introduction to Engineering. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Course open to first-year students majoring in electrical or computer engineering. Introduction to engineering through instruction on basic concepts of engineering. Topics will include an introduction to basic circuit components and circuit analysis, digital logic design and programming. General topics important to all engineers will also be covered, such as mathematics, improving written and oral communication skills, teamwork, ethics and life-long learning. The laboratory introduces fundamental testing, measurement, troubleshooting methodology and proper laboratory notebook maintenance. Engineering design and analysis is also emphasized through a team-based design that involves designing, building and programming a robot.

**EGRE 206. Electric Circuits. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: MATH 200 and EGRE 101, EGRM 101 or EGRB 102, as applicable per department, both with minimum grades of C. Corequisite: MATH 201. An introduction to electrical circuit theory and its application to practical direct and alternating current circuits. Topics include: Kirchhoff's Laws (review from EGRE 101, EGRM 101 or EGRB 102, as applicable), fundamental principles of network theorems, transient and steady-state response of RC, RL and RLC circuits by classical methods, time-domain and frequency-domain relationships, phasor analysis and power. Laboratory work, practical applications and integral laboratory demonstrations emphasize and illustrate the fundamentals presented in this course.

**EGRE 207. Electric Circuits II. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: EGRE 206, with a minimum grade of C. An introduction to higher level electric circuit theory, including the study of basic active components, such as diodes and operational amplifiers. Emphasis will be placed on design rather than analysis. The laboratory exercises will serve to train students in the art of designing a circuit to perform specific tasks and to conform to specific design parameters.

**EGRE 224. Introduction to Microelectronics. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 207 and MATH 301, both with a minimum grade of C. This course covers the analysis, modeling and design of electrical circuits which contain electronic devices. Students will learn to design analog circuits to specifications through laboratory problems, a design project and circuit simulation.

**EGRE 245. Engineering Programming Using C. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Restricted to electrical and computer engineering majors. Prerequisite: MATH 151 with a minimum grade of C. Students are expected to have fundamental computer skills. Introduction to the concepts and practice of structured programming using C. Problem-solving, top-down design of algorithms, basic C syntax, control structures, functions, arrays, files and strings.

**EGRE 246. Advanced Engineering Programming Using C++. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Restricted to electrical and computer engineering majors. Prerequisite: EGRE 245 with a minimum grade of C. Advanced programming for engineering applications in C++. Topics include objects, classes and inheritance; linked lists; recursion; basic searching and sorting techniques; and program design for control and monitoring type applications.

**EGRE 254. Digital Logic Design. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 101 and EGRE 245 or equivalents, both with a minimum grade of C. An introduction to digital logic design with an emphasis on practical design techniques and circuit implementations. Topics include number representation in digital computers, Boolean algebra, theory of logic functions, mapping techniques and function minimization, design of combinational, clocked sequential and interactive digital circuits such as comparators, counters, pattern detectors, adders and subtractors. An introduction on designing digital circuits using schematic capture, logic simulation and hardware description languages is included. Students will use the above basic skills in the laboratory to design and fabricate digital logic circuits using discrete logic and field programmable gate arrays.

**EGRE 303. Electronic Devices. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRE 306 and MATH 301, both with a minimum grade of C. An introduction to solid state electronic devices covering the fundamentals of atomic structure, band theory, charge transport in solids and terminal electrical characteristics of semiconductor devices including p-n junction and Schottky diodes, bipolar junction and insulated gate field-effect transistors.

**EGRE 306. Introduction to Microelectronics.. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 207 and MATH 301, both with a minimum grade of C. This course covers the analysis, modeling and design of electrical circuits which contain electronic devices. Students will learn to design analog circuits to specifications through laboratory problems, a design project and circuit simulation.

**EGRE 307. Integrated Circuits. 4 Hours.**

Semester course; 3 lecture hours and 3 laboratory hours. 4 credits. Prerequisite: EGRE 306 with a minimum grade of C or consent of instructor. Analysis, modeling, design and measurement of advanced MOSFET and bipolar analog integrated circuits. Topics include active filters, differential amplifiers, frequency response and feedback topologies. Operational amplifier circuit topologies are used as a means of studying input, gain, level shift and output stages. Circuit design techniques are explored for mixed signal analog-digital circuits. This course provides the opportunity for a group design project of an integrated circuit chip, using advanced software tools for simulation and physical layout.

**EGRE 309. Electromagnetic Fields. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRE 207, MATH 301, MATH 307 and PHYS 208, all with a minimum grade of C. Fundamentals of engineering electromagnetics, including electrostatics, magnetostatics, electrodynamics, analysis and understanding of the phenomena associated with electric and magnetic fields, wave dynamical solutions of Maxwell's equations, reflection and transmission of electromagnetic waves in dielectric materials, waveguides and transmission line structures, and radiation from antennas.

**EGRE 310. Microwave and Photonic Engineering. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRE 309 with a minimum grade of C. Wireless and optical communications applications of electromagnetic fields. Theory of microwave transmission line and waveguiding structures including impedance transformation and matching. Essential concepts from geometrical and physical optics and the interaction of photons with materials will be studied. Operating principles and design considerations of fiber optics, photodetectors and receivers are considered.

**EGRE 334. Introduction to Microfabrication. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: CHEM 101, MATH 201 and PHYS 208, all with a minimum grade of C. This course gives an overview of microscale device fabrication and testing for a general audience. A wide variety of new terms, equipment and processes are presented. Fundamentals of photolithography, mask making, diffusion, oxidation, ion implantation, film deposition and etching are covered. Laboratory work consists of safety training, hands-on fabrication experience and testing. A laboratory chip test is fabricated from start to finish and then tested. The test chip includes basic integrated circuit elements as well as solar cells.

**EGRE 335. Signals and Systems I. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 206 and 245 and MATH 301, all with a minimum grade of C. Presents the concept of linear continuous-time and discrete-time signals and systems, their classification, and analysis and design using mathematical models. Topics to be covered: the concepts of linear systems and classification of these systems, continuous-time linear systems and differential and difference equations, convolution, frequency domain analysis of systems, Fourier series and Fourier transforms and their application, and continuous-time to discrete-time conversion.

**EGRE 336. Introduction to Communication Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRE 337 with a minimum grade of C. Introduction to the theory and application of analog and digital communications including signal analysis, baseband transmission, amplitude and angle modulation, digital modulation, baseband digital communication, and design considerations.

**EGRE 337. Signals and Systems II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRE 335 with a minimum grade of C. This class presents the Laplace and Z transforms and their application to electrical circuits and discrete-time systems, an introduction to probability, random variables and random processes with applications in electrical engineering.

**EGRE 364. Microcomputer Systems. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 246 and 254, both with a minimum grade of C. Basic computer organization, microprocessor instruction sets and architectures, assembly language programming and the function of computer memory and I/O subsystems will be discussed. The laboratory is designed to reinforce the lectures by providing the opportunity to study the workings of a simple computer system in detail using simulation models and real hardware. Students will write and execute assembly language programs and make use of commercial design automation tools.

**EGRE 365. Digital Systems. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 246 and 254, both with a minimum grade of C. Corequisite: EGRE 364. Focuses on the design of modern digital systems. Topics covered include: introduction to modeling, simulation, synthesis and FPGA design techniques using VHDL; microprocessor peripherals and interfacing; embedded system hardware and software design issues.

**EGRE 397. Vertically Integrated Projects in Electrical and Computer Engineering. 1 Hour.**

Semester course; 3 laboratory hours. 1 credit. May be repeated for a maximum of 2 credits. Requires permission of the project faculty adviser. Restricted to electrical engineering and computer engineering majors. This course provides undergraduate students the opportunity to participate in multiyear, multidisciplinary projects under the guidance of faculty and graduate students in their areas of expertise. As they address research and development issues, students learn and practice many different professional skills, make substantial technical contributions to the project, and experience many different roles on a large, multidisciplinary design/discovery team.

**EGRE 402. Senior Design Studio I (Laboratory/Project Time). 2 Hours.**

Semester course; 6 laboratory hours. 2 credits. Prerequisite: senior standing in electrical engineering, participation in a senior design (capstone) project, EGRE 207, 246, 254, 335, and completion of any of EGRE 307, 310, 334, 365, 426, 435, 444, 454, 455, 520, 521, 522, 525, 526, 531, 533, 535, all with a minimum grade of C. Co-requisite: any 400-level electrical engineering technical elective. A minimum of six laboratory hours per week dedicated to the execution phase of the senior design (capstone) project, which should meet appropriate engineering standards and multiple realistic constraints. Tasks include team meetings, brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects.

**EGRE 403. Senior Design Studio II (Laboratory/Project Time). 2 Hours.**

Semester course; 6 laboratory hours. 2 credits. Prerequisite: EGRE 402 with a minimum grade of C. A minimum of six laboratory hours per week dedicated to the execution phase of the senior design (capstone) project, which should meet appropriate engineering standards and multiple realistic constraints. Tasks include team meetings, brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects.

**EGRE 426. Computer Organization and Design. 3 Hours.**

Semester course; 3 lecture and 1 laboratory hours. 3 credits. Prerequisite: EGRE 364 or CMSC 311 with a minimum grade of C. This course presents the foundation for computer design at the register transfer level. Starting from an instruction set architecture, students will learn the process used to design a data path and control unit to implement that instruction set. In addition, the topics of computer components and structures, data paths and control unit organizations, I/O and memory systems, interrupt systems, pipelining, and multiprocessing will be discussed. In addition to reinforcing the lecture material, the laboratory exercises will teach students the art of modeling and designing computer system components using a hardware description language.

**EGRE 427. Advanced Digital Design. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: EGRE 365 and 426, both with a minimum grade of C. This course provides students with practical foundations for the design, implementation and testing of digital systems. It expands on the digital and computer system theory presented in prerequisite courses. Topics covered include: microcontrollers and embedded processors, application specific IC (ASIC) architectures and implementing digital systems with ACISs, logic families and high-speed interfacing, logic synthesis, design methodologies, hardware/software codesign, production testing and design for testability, and construction, testing and debugging of digital system prototypes. In the laboratory, the students will design, construct, test and debug a multidisciplinary, computer-based hardware/software system to meet appropriate engineering standards and multiple realistic constraints.

**EGRE 428. Introduction to Integrated Systems Design. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: EGRE 364 with a minimum grade of C. This course provides an introduction to senior capstone design for computer engineers. Topics include hardware/software project design methodologies, integrated hardware and software design tools, life cycle costs analysis and requirements and specification analysis. Students are also introduced to concepts and design tools for FPGA and system-on-a-chip devices. Lectures are intended to support tasks required to execute a successful senior capstone experience. These tasks include, but are not limited to, project configuration management, customer interaction skills, requirements elicitation, simulation, procurement, design, testing and validation.

**EGRE 429. Advanced Digital Systems Design. 3 Hours.**

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisites: EGRE 365 and EGRE 428, both with a minimum grade of C. This course provides students with theoretical and practical foundations for advanced embedded systems design and cyber physical system applications. It extends the concepts introduced in EGRE 418. Special emphasis is placed on the design of advanced embedded computing platforms for cyber physical system applications. Topics covered include: introduction to cyber physical systems; cyber physical systems theory; FPGA and system-on-a-chip design environments; designing, developing and implementing cyber physical systems using FPGA and system-on-a-chip technology; real-time computing and operating systems; real-time sensor networks; engineering design standards; and verification and validation of complex designs. In the laboratory the students will use state-of-the-art system development tools to design, construct, test and verify a system-on-a-chip-based system to meet appropriate engineering standards and multiple realistic system constraints.

**EGRE 435. Microscale and Nanoscale Fabrication. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 303 and EGRE 334, both with a minimum grade of C. This course presents the design tools and techniques for designing a fabrication process as well as a device design and layout for advanced microscale and nanoscale devices. A number of different types of device technologies are covered, incorporating electronic, micromechanical and microfluidic devices and sensors. In the laboratory section of the course, students work in design teams to develop a complete fabrication process and design layout for a microscale device to meet appropriate engineering standards and multiple realistic constraints. Computer simulations and computer-aided design tools are used in the final design. The laboratory section of this course accomplishes the design phase of the senior design capstone project, which is presented at the end of semester and fabricated in the subsequent course, EGRE 436.

**EGRE 436. Advanced Microscale and Nanoscale Fabrication. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: EGRE 435 with a minimum grade of C. This course presents a detailed analysis of the physics and modeling of the fundamental processes used in semiconductor processing. Emphasis is placed on the non-ideal effects that cause realistic processes to deviate from first order models, including second order effects such as interactions on the atomic level and the influence of crystal defects. Processes covered in detail include oxidation, diffusion, ion implantation, thin film deposition and plasma etching techniques. Student work in design teams in the laboratory section, which focuses on the fabrication and testing of the microscale device developed in EGRE 435. The laboratory section of the course accomplishes the fabrication and testing phase of the senior design capstone project.

**EGRE 444. Communication Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRE 336 with a minimum grade of C. Design and analysis of analog and digital communication systems, pulse modulation, information and digital transmission, digital modulation, information theory and coding will be treated. Emphasis is placed on the student gaining an appreciation for and an understanding of the role of optimization and trade-offs by considering bandwidth requirements, signal-to-noise ratio limitations, complexity and cost of analog and digital communication systems.

**EGRE 454. Automatic Controls. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: EGRE 337, EGMN 305 or EGMN 315 with a minimum grade of C. For computer engineering or electrical engineering majors, the prerequisite is EGRE 337 with a minimum grade of C. This course covers the design and analysis of linear feedback systems. Emphasis is placed upon the student gaining mathematical modeling experience and performing sensitivity and stability analysis. The use of compensators to meet systems design specifications will be treated. Topics include: an overview and brief history of feedback control, dynamic models, dynamic response, basic properties of feedback, root-locus, frequency response and state space design methods. The laboratory will consist of modeling and control demonstrations and experiments of single-input/single-output and multivariable systems, analysis and simulation using MATLAB/Simulink and other control system analysis/design/implementation software.



**EGRE 455. Control Systems Design. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRE 454 with a minimum grade of C. This course covers the use of state space methods to model analog and digital linear and nonlinear systems. Emphasis is placed on the student gaining mathematical modeling experience, performing sensitivity and stability analysis and designing compensators to meet systems specifications. Topics treated will include a review of root locus and frequency design methods, linear algebraic equations, state variable equations, state space design and digital control systems (principles and case studies). The students will use complex dynamic systems for analysis and design.

**EGRE 471. Power System Analysis. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRE 206 with a minimum grade of C. Provides a comprehensive overview of electrical power system operation and design. Students develop models and tools for investigating system behavior and have opportunities for using those tools in design processes. At the completion of the course students will be able to develop appropriate models for an interconnected power system, perform power flow analysis, economic dispatch, power system protection and controls. Students will also be able to write a basic power flow computer program.

**EGRE 491. Special Topics. 1-5 Hours.**

Semester course; variable hours. 1-5 credits. May be repeated with different topics for a total of 21 credits. Advanced study of a selected topic in electrical or computer engineering. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**EGRE 492. Independent Study in Electrical and Computer Engineering. 1-5 Hours.**

Semester course; variable hours. 1-5 credits. May be repeated with different content for a total of 9 credits. Prerequisite: permission of the instructor. Students must submit a written proposal to be approved by the supervising instructor prior to registration. Investigation of specialized electrical or computer engineering problems through literature search, mathematical analysis, computer simulation and/or laboratory experimentation. Written and oral progress reports as well as a final report and presentation are required.

**EGRE 497. Vertically Integrated Project in Electrical and Computer Engineering. 2 Hours.**

Semester course; 6 laboratory hours. 2 credits. May be repeated for a maximum total of 6 credits. Prerequisites: EGRE 397 and permission of the project faculty adviser. Restricted to electrical engineering and computer engineering majors. This course allows undergraduate students to continue to participate in multiyear, multidisciplinary projects under the guidance of faculty and graduate students in their areas of expertise. As they address research and development issues, students learn and practice many different professional skills, make substantial technical contributions to the project, and experience many different roles on a large, multidisciplinary design/discovery team.

**Engineering (ENGR)****ENGR 101. Introduction to Engineering. 4 Hours.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: admission to the School of Engineering or permission of instructor. Introduces basic circuits including resistors, diodes, transistors, digital gates and motors. Simple electromechanical systems are considered including motors, gears and wheels. The laboratory introduces fundamental circuit testing and measurement, and proper laboratory notebook writing; students are required to analyze, build and test a digitally controlled robot.

**ENGR 121. Engineering Fundamentals. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Open only to non-engineering majors in Certificate in Product Innovation program. Introduces engineering fundamentals to students from non-engineering disciplines. Particular focus is the engineering problem-solving process as applied to open-ended problems. Students will be introduced to the different types of engineering, examine engineering issues and apply the engineering problem-solving process.

**ENGR 291. Special Topics in Engineering. 1-5 Hours.**

Semester course; variable hours. 1-5 credits. Prerequisite: to be determined by the instructor. Specialized topics in engineering designed to provide a topic not covered by an existing course or program. General engineering or multidisciplinary. May be repeated with different content. Graded as pass/fail or normal letter grading at the option of the instructor. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**ENGR 296. Part-time Internship Experience. 0 Hours.**

Semester course; 0 credit. Students may attempt this course a total of six times. Enrollment restricted to School of Engineering majors. The student works part time in an approved internship and must work a minimum of 90 hours, but less than 300 hours during the semester. The student works to meet learning objectives while gaining practical experience relevant to their major. The student completes assignments to document, assess and reflect on their learning experience. The supervisor and student both complete evaluations of the learning experience. Graded pass/fail.

**ENGR 303. Junior Seminar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. This course provides students an opportunity to explore business and leadership topics. Topics include the fundamentals of product design and new product development, manufacturing and quality systems, finances and financial reports, ethics in the workplace, intellectual property, teamwork, leadership and communications. Students will be assigned selected readings, written compositions and oral presentations. This course prepares the student to participate in the Engineering Laboratory/Manufacturing Internship.

**ENGR 395. Professional Development. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Restricted to School of Engineering majors. Professional development course to help prepare students to find a job and succeed in a professional environment, and specifically to work as an intern or in a cooperative education position. Topics covered include career paths; job searches; resume and cover letter writing; preparing for the interview; personal assessment of interests, values and strengths; networking; professional and ethical behavior on the job; overview of legal issues related to hiring, such as nondisclosure agreements and noncompete clauses; overview of personal finance management at the first job; workplace safety; and expectations and requirements for internships and cooperative education positions.

**ENGR 396. Internship Experience. 0 Hours.**

Semester course; 0 credit. Students may attempt this course a total of three times. Enrollment restricted to School of Engineering majors. The student works in an approved internship and must work a minimum of 300 hours during the semester. The student works to meet learning objectives while gaining practical experience relevant to their major. The student completes assignments to document, assess and reflect on their learning experience. The supervisor and student both complete evaluations of the learning experience. Graded pass/fail.



**ENGR 398. Cooperative Education Experience. 0 Hours.**

Semester course; 0 credits. Students may attempt this course a total of four times. Prerequisite: ENGR 395. Restricted to School of Engineering majors in good academic standing. The student works full-time in an approved cooperative education position. The student works to meet specific learning objectives while gaining practical experience relevant to their major. The student completes assignments to document, assess and reflect on their learning experience. The supervisor/mentor and student both complete midterm and final evaluations of the learning experience. Graded pass/fail.

**ENGR 399. Cooperative Education Experience II. 3 Hours.**

Semester course; 3 credits. Prerequisite: ENGR 398. Restricted to School of Engineering majors in good academic standing. A student that has completed at least one work term in a full-time approved cooperative education position completes an additional full-time work term. The student works to meet specific learning objectives while gaining practical experience relevant to their major. The student completes assignments to document, assess and reflect on their learning experience. The supervisor/mentor and student both complete midterm and final evaluations of the learning experience.

**ENGR 402. Senior Design Studio (Seminar). 1 Hour.**

Continuous courses; 1 lecture hour. 1-1 credit. Prerequisites: senior standing and participation in a senior design (capstone) project; completion of ENGR 402 to enroll in ENGR 403. This weekly seminar presents and discusses topics relevant to senior-level engineering students in support of the capstone project and upcoming graduation. A single course coordinator manages and administers the course and schedules the various faculty lectures and guest speakers. Topics include, but are not limited to, the following: proposal writing, project planning and management, scheduling resources and budgeting for technical projects, patents and intellectual property, quality systems (six sigma, ISO standards, statistical process control), entrepreneurship, creativity and innovation and professional registration.

**ENGR 403. Senior Design Studio (Seminar). 1 Hour.**

Continuous courses; 1 lecture hour. 1-1 credit. Prerequisites: senior standing and participation in a senior design (capstone) project; completion of ENGR 402 to enroll in ENGR 403. This weekly seminar presents and discusses topics relevant to senior-level engineering students in support of the capstone project and upcoming graduation. A single course coordinator manages and administers the course and schedules the various faculty lectures and guest speakers. Topics include, but are not limited to, the following: proposal writing, project planning and management, scheduling resources and budgeting for technical projects, patents and intellectual property, quality systems (six sigma, ISO standards, statistical process control), entrepreneurship, creativity and innovation and professional registration.

**ENGR 410. Review of Internship. 1 Hour.**

Semester course; 1 credit. Prerequisites: chemical, electrical and computer, or mechanical engineering major and experience to satisfy the engineering internship requirements. Students complete oral presentations and written reports summarizing the internship experience.

**ENGR 411. Fundamentals of Engineering Exam Preparation. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: senior or graduate standing, or permission of instructor. This course prepares students for taking the fundamentals of Engineering Exam. Passing the FE Exam is the first step to getting a Professional Engineering license. This course is not intended to teach the various subject matters, but to review the subject areas and help students prepare as well as possible for the examination.

**ENGR 490. Engineering Seminar. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated with different content. Prerequisite: permission of the instructor. A series of specialized topics in engineering that are of general interest but not covered by an existing course or program. Lectures will be presented in seminar format by speakers from business, industry, government and academia. Subjects will be multidisciplinary in nature. Graded as pass/fail or normal letter grading at the option of the instructor.

**ENGR 491. Special Topics in Engineering. 1-5 Hours.**

Semester course; variable hours. 1-5 credits. Prerequisite: determined by the instructor. Specialized topics in engineering designed to provide a topic not covered by an existing course or program. General engineering or multidisciplinary. May be repeated with different content. Graded as pass/fail or normal letter grading at the option of the instructor. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**ENGR 492. Independent Study in Engineering. 1-5 Hours.**

Semester course; variable hours. 1-5 credits. May be repeated with different content. Prerequisite: permission of the instructor. Students must submit a written proposal to be approved by the supervising instructor prior to registration. Investigation of specialized engineering problems that are multidisciplinary or of general interest through literature search, mathematical analysis, computer simulation and/or laboratory experimentation. Written and oral progress reports as well as a final report and presentation are required. Graded as pass/fail or normal letter grading at the option of the instructor.

**ENGR 496. Internship Review. 0 Hours.**

Semester course; 0 credits. Prerequisite: ENGR 296 or ENGR 396. Restricted to School of Engineering majors. This course is to be taken following the completion of a minimum of 300 hours of approved internship experience relevant to the student's major and documents that a student has fulfilled all internship requirements, including a final evaluation by the employer, a final self-evaluation, a final report describing the experience and a final oral presentation about the experience. Graded pass/fail.

**ENGR 497. Vertically Integrated Projects. 1,2 Hour.**

Semester course; 3 or 6 laboratory hours. 1 or 2 credits. May be repeated for a maximum total of 8 credits. Prerequisites: permission of the project faculty adviser. This course provides undergraduate students the opportunity to participate in multiyear, multidisciplinary projects under the guidance of faculty and graduate students in their areas of expertise. As they address research and development issues, students learn and practice many different professional skills, make substantial technical contributions to the project, and experience many different roles on a large, multidisciplinary design/discovery team. Students must earn a minimum of 4 credits in ENGR 497 with a minimum grade of C in order for these credits to be eligible to count toward a technical or departmental elective. More restrictive requirements may be imposed by individual departments.

**ENGR 498. Review of Cooperative Education Experience. 0 Hours.**

Semester course; 0 credits. Prerequisite: ENGR 398. Restricted to School of Engineering majors. This course is completed following the final work term of a cooperative education experience and is required to obtain transcript notation to document that a student has fulfilled all the requirements of the school's cooperative education program. The requirements include a final evaluation by the employer, a final self-evaluation, a final report describing the experience and a final oral presentation about the experience.

## Mechanical and Nuclear Engineering (EGMN)

### EGMN 102. Engineering Statics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 200 with a minimum grade of C or permission of instructor. Corequisite: PHYS 207 or permission of instructor. The theory and application of engineering mechanics applied to the design and analysis of rigid structures. Equilibrium of two- and three-dimensional bodies. The study of forces and their effects. Applications to engineering systems.

### EGMN 103. Mechanical and Nuclear Engineering Practicum I. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. Students will perform a sequence of laboratory modules designed to provide practical hands-on exposure to important topics, equipment and experimental methods in mechanical and nuclear engineering. Topics covered include communication, optimization, reverse engineering, mechanics, thermodynamics and electric circuits.

### EGMN 190. Introduction to Mechanical and Nuclear Engineering. 1 Hour.

Semester course; 1 lecture hour. 1 credit. The course will introduce students to the engineering profession, present basic mechanical and nuclear engineering concepts and include seminars presented by alumni, industry and experts in their fields.

### EGMN 201. Dynamics and Kinematics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 207, EGMN 102 and MATH 201, with a minimum grade of C in each, or permission of the instructor. Kinematics and kinetics of particles. Kinematics of rigid bodies; translation and fixed-axis rotation relative to translating axes, general planar motion, fixed-point rotation and general motion. Kinetics of rigid bodies: center of mass, mass moment of inertia, product of inertia, principal-axes, parallel axes theorems. Planar motion, work-energy method. Design of cams, gears and linkages.

### EGMN 202. Mechanics of Deformables. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGMN 102 and MATH 201, with a minimum grade of C in both, or permission of the instructor. An introductory course covering the mechanics of deformable solids. Subjects include stress, strain and constitutive relations; bending of beams; torsion; shearing; deflection of beams; column buckling; fatigue; failure theory; analysis and design of bar-type members.

### EGMN 203. Mechanical and Nuclear Engineering Practicum II. 1 Hour.

Semester course; 3 laboratory hours. 1 credit. Students will perform a sequence of laboratory modules designed to provide practical hands-on exposure to important topics, equipment and experimental methods in mechanical and nuclear engineering. Topics covered include additive manufacturing, radiation detection and measurement, radiation shielding, data acquisition and computer interfacing, coding for instrumentation control.

### EGMN 204. Thermodynamics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 207 and MATH 201 with a minimum grade of C in both, or permission of the instructor. Fundamental concepts of thermodynamics; first and second law of thermodynamics; entropy and equilibrium; equations of state; properties of pure fluids; molecular interpretation of thermodynamic properties; phase equilibria; work and heat; power cycles; chemical reactions.

### EGMN 215. Engineering Visualization and Computation. 3 Hours.

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisites: mechanical engineering major or permission of the instructor. Programming in C++ and MATLAB will be introduced. The creation and interpretation of graphical communication for engineering students. Two- and three-dimensional part and assembly representations. Dimensioning and tolerancing as a link between design and manufacturing. An introduction to solid modeling and virtual prototyping. The course will impart proficiency in computer and graphical applications of fundamental and practical importance to engineering students.

### EGMN 300. Mechanical Systems Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGMN 201 and EGMN 202, with a minimum grade of C in both, or permission of the instructor. Basic principles of applied mechanics and materials employed for the design of machine elements and mechanical systems; state of stress, deformation and failure criterion is applied to bearings, brakes, clutches, belt drives, gears, chains, springs, gear trains, power screws and transmissions.

### EGMN 301. Fluid Mechanics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 207 and EGMN 204, with a minimum grade of C in each, or permission of instructor. Corequisite: MATH 301 or permission of instructor. Basic and applied fluid mechanics; fluid properties; application of Bernoulli and Navier-Stokes equations; macroscopic mass, momentum and energy balances; dimensional analysis; laminar and turbulent flow; boundary layer theory; friction factors in pipes and packed beds; drag coefficients; compressible flow; flow measurements; numerical simulation; applications to the operation and design of turbo machinery.

### EGMN 302. Heat Transfer. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENGR 301, EGMN 204, MATH 301 and 307, with a minimum grade of C in each, or permission of instructor. Basic and applied heat transfer; diffusion and rate concepts; evaporation; boiling and condensation; dispersion coefficients; stagnant film; falling film; porous membrane; packed bed; numerical simulation; applications to industrial processes. Lecture topics will include a review of fundamental concepts in thermodynamics.

### EGMN 303. Thermal Systems Design. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301, ENGR 301 and EGMN 204, with a minimum grade of C in each, or permission of the instructor. Fundamentals of heat transfer, thermodynamics and fluid mechanics applied to the analysis, design, selection and application of energy conversion systems.

### EGMN 305. Sensors/Measurements. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301 with a minimum grade of C, PHYS 208 and STAT 541; or permission of instructor. Introduction to sensors and their utilization for measurement and control; sensor types: electromechanical, electro-optical, electro-chemical; applications in medicine, chemical manufacturing, mechanical control and optical inspection.

### EGMN 309. Material Science for Engineers. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CHEM 101 or permission of instructor. The study of materials from a microscopic or atomic level. Consideration of mechanical, electrical, thermal, magnetic and optical properties of metals, ceramics, polymers and composites. Thermal processing for modification of properties, dislocation and phase transformation. Material selection for design with consideration of economic, environmental and societal issues.

**EGMN 311. Solid Mechanics Lab. 1.5 Hour.**

Semester course; 4.5 laboratory hours. 1.5 credits. Prerequisites: EGMN 201 and 202, with a minimum grade of C in both, or permission of the instructor. Experiments will be conducted on fundamental principles of solid mechanics, materials and dynamics. Topics covered include testing of materials for tensile, compression, bending and torsional loads, vibrations and material microstructure.

**EGMN 312. Thermal Sciences Lab. 1.5 Hour.**

Semester course; 4.5 laboratory hours. 1.5 credits. Prerequisites: ENGR 301, with a minimum grade of C, or permission of the instructor. Experiments will be conducted on fundamental principles of fluid mechanics, thermodynamics and heat transfer. Topics covered include hydrostatics, Bernoulli equation, impact jets, aerodynamic force, heat pump thermodynamics cycles, heat exchangers and convection heat transfer.

**EGMN 315. Process and Systems Dynamics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301, EGRE 206, EGMN 201 and PHYS 207, all with a minimum grade of C; or permission of instructor. Undergraduate course covering the analysis of chemical, fluid, mechanical and electrical dynamic systems. Pedagogically, a single approach is taught that applies to any of the systems in any of these disciplines using conservation equations and constitutive relationships to build the systems of differential equations needed for the analysis. The mathematical structures of the types of differential equations typically generated in dynamic physical systems are reviewed and both analytical and numerical solution techniques are taught. Finally, the tools used to develop control components for systems in these areas are covered along with the mathematical tools (e.g., Laplace transforms) needed for their analysis.

**EGMN 321. Numerical Methods. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301 and EGMN 215, with a minimum grade of C in both, or permission of instructor. A study of numerical algorithms used in error analysis, computing roots of equations, solving linear algebraic equations, curve fitting, numerical differentiation and integration, numerical methods for ordinary differential equations and a brief introduction to numerical methods for partial differential equations. The course content is tailored for mechanical engineering applications.

**EGMN 351. Nuclear Engineering Fundamentals. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Restricted to mechanical engineering majors. Prerequisite: MATH 200 with a minimum grade of C or permission of the instructor. An introductory course to familiarize students with the concepts, systems and application of nuclear energy. Topics include radioactivity, fission, fusion, reactor concepts, biological effects of radiation, nuclear propulsion and radioactive waste disposal. Designed to provide students with a broad perspective of nuclear engineering.

**EGMN 352. Nuclear Reactor Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGMN 351 with a minimum grade of C or permission of instructor. Corequisite: MATH 301 or permission of instructor. This course introduces the fundamental properties of the neutron, the reactions induced by neutrons, nuclear fission, the slowing down of neutrons in infinite and finite media, diffusion theory, the 1-group or 2-group approximation, point kinetics, and fission-product poisoning. Provides students with the nuclear reactor theory foundation necessary for reactor design and reactor engineering problems.

**EGMN 355. Radiation Safety and Shielding. 3 Hours.**

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: EGMN 352 with a minimum grade of C, or permission of instructor. Fundamentals of radiation safety and shielding with focus on sources of radioactivity, interaction of radiation with matter, biological effects of radiation, dosimetry, attenuation of gamma rays and neutrons and effectiveness of shielding methods.

**EGMN 356. Nuclear Instrumentation and Measurements. 3 Hours.**

Semester course; 6 laboratory hours. 3 credits. Prerequisite: EGMN 355 with a minimum grade of C or permission of instructor. Provides an in-depth study of radiation detection systems. Students will understand both the practical operation of detection systems as well as the physical processes involved in radiation detection, attenuation and shielding.

**EGMN 401. Mechanical Engineering Leadership. 3 Hours.**

Semester course; 9 laboratory hours. 3 credits. Enrollment restricted to students with junior or senior standing in mechanical engineering and permission of the instructor. Senior/junior students will serve as lab teaching assistants in EGMN 103, EGMN 203, EGMN 215, EGMN 311 or EGMN 312. Leadership skills will be honed as the senior/junior students guide, lead and supervise other students as they complete hands-on learning modules and/or design, conduct, analyze and report on experiments in one of these lab courses.

**EGMN 402. Senior Design Studio (Laboratory/Project Time). 2 Hours.**

Continuous course; 6 laboratory hours. 2 credits. Prerequisite: senior standing and participation in a senior design (capstone) project. Mechanical engineering majors are required to have the following prerequisites: EGMN 300, 303 and 420, and either EGMN 421 or EGRN 420, with a minimum grade of C in each. A minimum of six laboratory hours per week dedicated to the execution phase of the senior design (capstone) project, which should meet appropriate engineering standards and multiple realistic constraints. Tasks include team meetings, brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects.

**EGMN 403. Senior Design Studio (Laboratory/Project Time). 2 Hours.**

Continuous course; 6 laboratory hours. 2 credits. Prerequisite: senior standing and participation in a senior design (capstone) project; EGMN 402. A minimum of six laboratory hours per week dedicated to continuing the execution phase of the senior design (capstone) project, which should meet appropriate engineering standards and multiple realistic constraints. Tasks include team meetings, brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects.

**EGMN 416. Mechatronics. 3 Hours.**

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisites: senior standing and EGRE 206 with a minimum grade of C, or permission of instructor. Lecture materials and laboratory experiments focus on the fundamentals of design-oriented mechanical, electrical and computer systems integration. Specifically, students learn analog and digital electronic design, data acquisition, transducers, actuator technologies and control, design with microprocessors and embedded electronics, and application of control theory.

**EGMN 420. CAE Design. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGMN 201 and EGMN 215, with a minimum grade of C in both, or permission of instructor. Review of geometric modeling, engineering visualization tools applicable to engineering design. Develop visual thinking and communication skills with assistance of computer modeling tools. Emphasis placed on creative design, application of physical laws, and hands-on virtual or physical projects. Topics include review of kinematics/dynamics of commonly used planar mechanisms and programming techniques for motion simulation. Interdisciplinary projects will be assigned to assess students' design knowledge.

**EGMN 421. CAE Analysis. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: EGMN 202 and EGMN 215; and MATH 301 and MATH 307, all with a minimum grade of C, or permission of the instructor. Application of computer-aided techniques to the analysis of engineering problems utilizing linear algebra, computer calculations of matrices and numerical solution of governing differential equilibrium equations common to all fields of engineering. Students will be exposed to formulations of finite element methods of analysis. Emphasis is placed on practical aspects of structural FE modeling. Analysis programs such as ANSYS, MSC/PATRAN, MSC/NASTRAN and/or MATLAB are utilized.

**EGMN 425. Introduction to Manufacturing Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: senior standing in the School of Engineering or permission of the instructor. Basic principles of systems analysis and modeling applied to manufacturing processes and operations; numerical control, programmable controllers, flexible manufacturing systems, group technology, process planning and control, modeling and simulation of factory operations.

**EGMN 426. Manufacturing Processes. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: senior standing in the School of Engineering or permission of the instructor. Introduction to the operation and design of metal fabrication processes; analysis of metal casting, extrusion, rolling, forging, wire and rod drawing; review of metal removal and joining methods; economic and business considerations.

**EGMN 427. Robotics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: senior standing in the School of Engineering or permission of the instructor. Introduction to the state-of-the-art and technology of robotics and its applications for productivity gain in industry.

**EGMN 428. Polymer Processing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENGR 301 and 302, with a minimum grade of C in both, or permission of the instructor. Basic principles of momentum and heat transfer applied to the analysis of polymer processing operations; introduction to polymer rheology; operation and design aspects of extruders, blown film, injection molding, thermoforming and compression molding machinery.

**EGMN 435. Design for Manufacturing and Assembly. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: senior standing in the School of Engineering or permission of the instructor. Methodologies used in the synthesis and analysis of product design in order to optimize manufacturing and assembly; relationship of design to the production processes, materials handling, assembly, finishing, quality and costs with emphasis on both formed and assembled products.

**EGMN 436. Engineering Materials. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: senior standing in the School of Engineering or permission of the instructor. Materials properties and their modification as related to engineering properties and design; elastic and plastic stress-strain behavior of materials along with diffusion in solids, phase equilibria, and phase transformations; materials selection considerations include design, fabrication, mechanical failure, corrosion, service stability as well as compatibility and function in the human body.

**EGMN 437. Principles of Polymer Engineering. 3 Hours.**

Semester course; 3 lecture and 1 laboratory hours. 3 credits. Prerequisites: EGMN 202 with a minimum grade of C, or permission of the instructor. Basic principles of mechanics applied to the mechanical design and fabrication of polymers; introduction to polymer structure, rubber elasticity, and viscoelasticity; mechanical properties, plastic part design and plastic materials selection; fabrication processes.

**EGMN 450. Nuclear Reactor Control and Dynamics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301, EGMN 201 and EGRN 420, with a minimum grade of C in each, or permission of instructor. An introduction to control theory and its applications for nuclear engineering students. Modeling and development of differential equations for nuclear systems. Analysis of nuclear reactor dynamics in the time and frequency domains. Application of feedback control techniques to reactor operation, stability and performance.

**EGMN 451. Nuclear Safety and Security. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRN 420/EGMN 455 with a minimum grade of C, or permission of the instructor. A study of technological risks and security issues related to nuclear power. Analysis of nuclear reactor system components and operational features that are relevant to safety; reactor containment; safety analysis of nuclear power plants using deterministic and probabilistic models; methods for human, environmental and ecological risk assessment; NRC regulations and procedures; safeguarding against natural (earthquake, tornadoes) and human (domestic and international) threats; classification and consequences of accidents including historical case studies.

**EGMN 453. Economics of Nuclear Power Production. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGMN 350 with a minimum grade of C or permission of instructor. Fundamentals of engineering economic analysis are applied to energy supply, demand, prices and production with specific emphasis on nuclear energy, the capital cost of nuclear power plants, the nuclear fuel cycle and associated energy technologies.

**EGMN 455. Nuclear Power Plants. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGMN 204 and EGMN 350, each with a minimum grade of C, or permission of instructor. Design and analysis of nuclear power plants. Review of thermodynamic cycles and reactor types; analysis of the coupling of the reactor and the power plant; thermal and mechanical design of steam turbines; turbogenerators; auxiliary systems; design synthesis and heat balance calculations; operation of nuclear reactors.

**EGMN 456. Reactor Design and Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGMN 302, 303 and 455, each with a minimum grade of C, or permission of instructor. Engineering principles of nuclear reactors, emphasizing power reactors. Specific topics include power plant thermodynamics, reactor heat generation and removal (single-phase as well as two-phase coolant flow and heat transfer), and structural mechanics. The course also covers engineering considerations in reactor design.



**EGMN 491. Special Topics in Engineering. 1-5 Hours.**

Semester course; variable hours. 1-5 credits. May be repeated with different content. Prerequisite: determined by the instructor. Specialized topics in engineering designed to provide a topic not covered by an existing course or program. General engineering or multidisciplinary. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**EGMN 492. Independent Study in Engineering. 1-5 Hours.**

Semester course; variable hours. 1-5 credits. May be repeated with different content. Enrollment requires permission of the instructor. Students must submit a written proposal to be approved by the supervising instructor prior to registration. Investigation of specialized engineering problems that are multidisciplinary or of general interest through literature search, mathematical analysis, computer simulation and/or laboratory experimentation. Written and oral progress reports as well as a final report and presentation are required.

## **L. Douglas Wilder School of Government and Public Affairs**

### **Criminal Justice (CRJS)**

**CRJS 181. Introduction to Criminal Justice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Comprehensive overview of criminal justice; assesses the extent of crime; reviews law enforcement, judicial and correctional processes at all levels of government; discusses history and philosophy of public safety; evaluates career opportunities.

**CRJS 252. Juvenile Justice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181 or permission of instructor. Examines all segments of juvenile justice and special procedures designed for young persons; recognizes the importance of proper handling of the juvenile by the police and the courts; reviews recent developments in juvenile rehabilitation.

**CRJS 253. Introduction to Corrections. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. A survey of societal responses to the offender; traces the evolution of practices based on philosophies of retribution, punishment and rehabilitation; reviews contemporary correctional activities and their relationships to other aspects of the criminal justice system; introduces the emerging area of correctional programming within the community.

**CRJS 254. Introduction to Policing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. A survey of different facets of law enforcement including the activities of public police agencies and private security organizations. Assesses changes in law enforcement philosophy and practices, police relationships with the public and the political arena and anticipated future trends in policing.

**CRJS 255. Introduction to Legal Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Overview of the American legal system, processes, terminology; analysis of historical and philosophical bases of law. Examines the systems that adjudicate criminal and civil law; considers the role of law in the functioning of the justice system.

**CRJS 300. Forensic Criminology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. The intersection of law, predictions of dangerousness, mental disorder and crime. Behavioral prediction, classification and the development of typologies of offenses and offending will be considered. Issues in the use of clinical and statistical prediction methods in criminal justice will be presented.

**CRJS 302. Legal Writing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 200 or HONR 200, and ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291, or 295. Intensive practice in writing on subjects related to law or legal problems. Emphasis on organization, development, logical flow and clarity of style. May not be used to satisfy the literature requirement of the College of Humanities and Sciences. Crosslisted as: ENGL 302.

**CRJS 305. Policing Theories and Practice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181 and 254. An overview of the nature and application of law enforcement theory. Examines the theoretical underpinnings of a variety of law enforcement practices, with emphasis on evolving trends.

**CRJS 320. Principles of Criminal Investigation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Surveys the fundamentals of criminal investigation procedures and techniques. Examines crime scene management, searching, collecting, handling and preserving of evidence as applied to forensic crime scene investigation.

**CRJS 324. Courts and the Judicial Process. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Examines the systems that adjudicate criminal and civil law; includes constitutional authority, jurisdictions and trial processes, with particular emphasis on reform in court administration, disposition without trial and sentencing.

**CRJS 350. Evaluation and Treatment of the Offender. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181 and 253. An analysis of the issues and procedures involved in evaluating individual differences in offenders and among classes of offenders; current diagnostic and treatment methods are discussed; introduces the student to case analysis and correctional counseling techniques. Includes analysis of evaluation and treatment resources external to corrections.

**CRJS 351. Community Corrections. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181 and 253. A comprehensive review of various community-based rehabilitation and treatment efforts; includes analysis of probation, parole, work release, halfway houses and other methods of re-integrating the offender into society.

**CRJS 352. Crime and Delinquency Prevention. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Review and analysis of the problems associated with prevention of crime and delinquency, viewed in a total systems context. Programs and activities involving citizen, community and agency interrelationships will be developed and examined. Students are responsible for preparing and evaluating projects with crime preventive goals.

**CRJS 355. Criminological Theory. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181 or permission of instructor. Examines the intellectual underpinnings of the criminal justice system. Includes analysis of evolving values and ideas regarding social control, individual and collective responsibilities and rights, the role of punishment, politics and the law, practitioners as public servants, and criminological and other foundations of the criminal justice system.



**CRJS 358. Lawyer's Role in the Justice System. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Examines the multiple responsibilities of lawyers from an historical and contemporary perspective. The basic techniques of the lawyer's craft will be studied with emphasis placed on case advocacy, negotiation skills and legal reasoning, and problem-solving.

**CRJS 360. Foundations of Criminal Law. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Clarifies both the content and role of criminal law within criminal justice and its administration in America. Explores the moral, theoretical and historical foundations of American criminal law and jurisprudence; elements and classification of criminal conduct; burdens of proof; defenses to criminal culpability; and a variety of crime types focusing in particular on crimes against person and property.

**CRJS 370. Criminalistics and Crime Analysis. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. A comprehensive evaluation of current developments in research, instrumentation and laboratory technology utilized to detect, identify, analyze and compare evidence.

**CRJS 373. Crime Scene Evidence: Law and Trial Procedure. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Provides a fundamental understanding of evidence law. Examines the nature and admissibility of various forms of evidence. Provides an understanding of the investigator's role in the judicial process including the presentation of testimony and adversarial proceedings.

**CRJS 380. Research Methods in Criminal Justice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181 and STAT 210. Designed to familiarize the student with current and applied research methods in criminal justice, including the application of data and information processing techniques and procedures; analyzes research in criminal justice journals and government reports; and enhances the capability to evaluate contemporary research.

**CRJS 382. Gender, Crime and Justice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181 or permission of instructor. Examines the role of gender as it relates to crime and justice. Special attention will focus on the gendered experiences of practitioners, offenders and victims within the criminal justice system in terms of processing, adjudication and institutional responses. Crosslisted as: GSWS 382.

**CRJS 400. Current Issues in Juvenile Justice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Restricted to criminal justice majors. Examines key issues facing the modern American juvenile justice system. Integrates social science research, juvenile justice policy and legal scholarship pertaining to current law and policy controversies in juvenile justice.

**CRJS 401. Sex Crime and Society. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Restricted to criminal justice majors. Examines the nature and extent of sex offending, societal responses to sex crime, and the laws and policies enacted to reduce sexual offending. Explores the etiology of sex offending as well as methods to evaluate the efficacy of sex crime laws.

**CRJS 405. Special Issues in Juvenile Detention. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Restricted to criminal justice majors. Examines the operations of modern juvenile detention facilities with an emphasis on the special needs of youth detainees. Explores the challenges facing administrators, staff and youth residents within a juvenile correctional setting.

**CRJS 406. Issues in Short-term Detention. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181 and 253. Restricted to criminal justice majors. Examines issues encountered by corrections officers who work in jails and other short-term detention facilities. Explores the role of jails within the criminal trial process, the diverse nature of the jail inmate population and the challenges of pretrial detention for both offenders and staff.

**CRJS 407. Urban Jails. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181 and CRJS 253. Restricted to criminal justice majors. Examines issues encountered by corrections officers who work in urban short-term detention facilities. Explores the complexities of jails in urban settings as well as the diverse and dynamic offender population in urban jails.

**CRJS 425. Violent Crime Scene Investigation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Introduces students to specialized tools and scientific aids used in the criminal investigation of homicide and rape cases. Applies investigative techniques and preparation of trial evidence used in homicides and rape cases.

**CRJS 432. Criminal Justice: Organizations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Considers the behavioral dimensions of administrations in criminal justice and public safety agencies. Examines the concepts of leadership and decision-making and the effect of environmental dynamics in the management of the criminal justice system.

**CRJS 434. Police Administration. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181 and 254. Examines major management concepts and principles with special emphasis on consideration of law enforcement. Policies and procedures formulated and followed by managers in law enforcement settings will be evaluated from a structural as well as a functional perspective. Contemporary and anticipated future problems, challenges and trends facing police managers will be addressed.

**CRJS 450. Cyber Crime and Computer Forensics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Study of computer-related crime and related laws and policies. Focus on the investigation and processes of securing evidence for computer-related crimes.

**CRJS 463. Comparative Criminal Justice Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Study of national and international criminal justice systems with an emphasis on historical, cultural and operational comparisons. Contemporary research relating to law enforcement, adjudicative and correctional systems will be considered.

**CRJS 468. Economic and Organized Crime. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181. Analysis of the types of offenses which occur in the business and governmental work and the consequences of illegal practices. Primary attention will address the public sector through the methods utilized to detect and investigate criminal activities affecting governmental units. Relationships to organized crime will be described for each of the specific topics and techniques.

**CRJS 475. Criminal Procedure. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CRJS 181 or permission of instructor. Analyzes criminal procedure regarding the courts and their supervisory role over prosecutions and the use of testimonial and non-testimonial evidence. Examines the judicial interpretive processes by which the public safety is balanced with individual rights.

**CRJS 480. Senior Seminar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 181, 355 and 380. Restricted to seniors in criminal justice with at least 85 credit hours taken toward the degree. A capstone course designed to assist students to apply and to think critically about current knowledge regarding crime, crime trends, law, law enforcement, the adjudication process, corrections and crime prevention. Scenarios, research, projections and evaluation of different viewpoints will be employed to develop the student's ability to assess methods of argumentation, use information and apply existing knowledge to new fact situations.

**CRJS 491. Topics in Criminal Justice. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisite: CRJS 181. In-depth examination of selected administration of justice topics. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**CRJS 492. Directed Individual Study. 1-3 Hours.**

Semester course; variable hours. 1, 2 or 3 credits. Maximum total of 6 credits. Prerequisite: CRJS 181. Available to all other criminal justice students who are seniors and have a minimum GPA of 3.0 (with permission of department chair) as a substitute for a major elective course. Provides an independent study opportunity for the adult student who is (or was) employed in a criminal justice, safety or risk administration position and who does not require internship or volunteer experience.

## Government and Public Affairs (GVPA)

**GVPA 391. Special Topics in Government and Public Affairs. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. A maximum 6 credits in all special topics courses offered in the Wilder School may be applied to any of the school's majors. Intended for sophomores and juniors. An intensive focus on a selected field of interest relevant to all majors in the school. See the Schedule of Classes for specific topics to be offered each semester.

**GVPA 399. Introduction to Science and Technology Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to the study of science, technology and medicine from political, sociological and historical perspectives, focusing on case studies that illustrate the methods and theories used to examine the structure and behavior of the scientific community and the role of scientific knowledge in shaping public culture. Crosslisted as: HIST 399/SCTS 300.

**GVPA 423. Virginia Capital Semester Seminar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Open only to students in the Virginia Capital Semester program. Designed as an integral part of the program, this course provides an examination of state policy issues and state legislative processes using the current Virginia General Assembly session as illustration.

**GVPA 491. Advanced Special Topics in Government and Public Affairs. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. A maximum 6 credits in all special topics courses offered in the Wilder School may be applied to any of the school's majors. Intended for advanced students and seniors. An intensive focus on a selected field of interest relevant to all majors in the school. See the Schedule of Classes for specific topics to be offered each semester.

**GVPA 493. Government and Public Affairs Internship. 1-6 Hours.**

Semester course; variable hours. 1-6 credits. (50 hours per credit.) May be repeated for a maximum of 6 credits. Permission of internship coordinator required. Designed to provide the student with an opportunity to relate theory to practice through observation and actual experience within the field of government and public affairs.

**GVPA 494. Virginia Capital Semester Internship. 3 Hours.**

Semester course; 3 credits. Open only to students in the Virginia Capital Semester program. Designed to provide students with an opportunity to relate theory to practice through participation in activities related to the annual session of the Virginia General Assembly.

**GVPA 495. UROP Directed Study. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Students enrolling in this course must meet the eligibility requirements of the Undergraduate Research Opportunity Program. Designed to provide advanced research opportunities to undergraduate students. Topics chosen in consultation with the UROP coordinator. Students may take a total of six GVPA 495 credits; only three of those credits may be applied to the major.

**GVPA 499. Wilder School Scholars Seminar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Capstone seminar course focusing on a broad topic in one of several disciplines of interest to Wilder School Scholars. Topics, structure and content determined each semester.

## Homeland Security and Emergency Preparedness (HSEP)

**HSEP 101. Homeland Security and Emergency Preparedness. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to the public- and private-sector dimensions of the broad range of theoretical and practical aspects of homeland security and emergency preparedness, including: origins of natural and terrorist-caused disasters; local, state and federal emergency management planning and operations; health infrastructure capabilities; public communication strategies; business community concerns; ethical, legal and constitutional questions; as well as the social and psychological dimensions of disasters.

**HSEP 301. Terrorism. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HSEP 101, POLI 103 and INTL 105/POLI 105, or permission of instructor. A survey of the modern problem of terrorism with an emphasis on the political nature of terrorist acts. Examines the history of terrorism, domestically within the U.S. and internationally, the role of religion, the structures and operations of terrorist organizations, as well as counterterrorism policies and policy-making. Crosslisted as: POLI 367.

**HSEP 302. Emergency Planning and Incident Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HSEP 101, POLI 103 and INTL 105/POLI 105, or permission of instructor. An introduction to the basic tasks of emergency preparedness and disaster mitigation, including planning, response and recovery. Special emphasis will be placed on command arrangements, coordination and budgetary issues among emergency responders (law enforcement, firefighters and health care system officials), and within and between federal, state and local governments.

**HSEP 310. Risk and Vulnerability Assessment. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 210, CRJS 367/HSEP 301/POLI 367 and CRJS 368/HSEP 302, or permission of instructor. An introduction to analytical techniques and methodologies for threat and vulnerability assessment of various types of public and private infrastructure. An all-hazard approach is employed, considering natural disaster, system failure and terrorist attack (conventional or weapons of mass destruction). Special attention will be focused on critical infrastructure protection as well as cyberterrorism.

**HSEP 311. Strategic Planning for Homeland Security and Emergency Preparedness. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 367/HSEP 301/POLI 367 and CRJS 368/HSEP 302, or permission of instructor. An examination of the strategic planning for emergency preparedness, operations and recovery for all hazards, as well as terrorist-prevention security measures. The course will focus on public goods/free rider issues, setting organizational priorities, governmental budgeting choices, legal aspects of government regulation of infrastructure and business community security concerns.

**HSEP 320. The Intelligence Community and the Intelligence Process. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HSEP 301/POLI 367 and HSEP 302, or permission of instructor. An examination of the concepts of and challenges for state, local and federal policy making and organization for homeland security and emergency preparedness. The intelligence process — the collection, analysis, sharing and dissemination of information within and between local, state and federal governmental agencies — is a special focus.

**HSEP 330. Legal and Constitutional Issues in Homeland Security and Emergency Preparedness. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HSEP 301/POLI 367 and HSEP 302, or permission of instructor. An analysis of the legal and civil liberties changes and challenges brought on by terrorist attacks. Topics addressed may include surveillance issues, federal legislation passed in the aftermath of the terrorist attacks, the rights of foreign nationals, the rights of U.S. citizens, the governmental infrastructure for decisions concerning legal rights and the difficulties of prosecuting terrorist suspects, such as jurisdictional issues, rules of evidence and prosecution strategies.

**HSEP 360. Critical Infrastructure Protection and Resiliency. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: HSEP 310. An advanced study of homeland security critical infrastructure protection and resiliency from an all-hazards perspective. Develops an understanding of the policy, strategy and practical application of critical infrastructure protection and resiliency issues. Special emphasis on understanding the strategic context presented by the 21st-century risk environment, DHS critical infrastructure sectors, and the challenges and opportunities.

**HSEP 391. Topics in Homeland Security and Emergency Preparedness. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Maximum total of six credits in all departmental topics courses may be applied to the major. Prerequisites: CRJS 367/HSEP 301/POLI 367 and CRJS 368/HSEP 302. An intensive focus on a specialized field of interest to the study of homeland security and emergency preparedness. See the Schedule of Classes for specific topics to be offered each semester.

**HSEP 490. Senior Seminar. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HSEP 310, HSEP 311, HSEP 320/CRJS 375 and HSEP 330/CRJS 330. A capstone course examining the major issues related to homeland security and emergency preparedness. Students will be required to produce a research project related to a role-playing in-class simulation of an emergency situation that will include exercises in red-teaming.

**HSEP 491. Advanced Topics in Homeland Security and Emergency Preparedness. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CRJS 367/HSEP 301/POLI 367 and CRJS 368/HSEP 302. An intensive focus on a specialized field of interest to the study of homeland security and emergency preparedness within a seminar setting. See the Schedule of Classes for specific topics to be offered each semester. Maximum total of six credits in all departmental topics courses may be applied to the major.

**HSEP 492. Independent Study. 1-4 Hours.**

Semester course; 1-4 credits. Maximum total of six credits in all independent study courses may be applied to the major. Prerequisites: junior or senior standing with 12 credits in HSEP courses. Permission of instructor or program director required, with determination of course credit value prior to registration. An independent study that allows students to perform research under the direction of qualified instructor in a subject or field of major interest.

**Urban Studies and Planning (URSP)****URSP 102. Introduction to Human Geography. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to human geography from a global perspective, emphasizing settlement patterns, human-environment interactions, cultural variations, political transitions and population change in the global economy.

**URSP 108. Uncovering Richmond. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to the dramatic changes Richmond has undergone in recent decades and how those changes mirror trends in cities across the country. The student will discover the role of politics, public safety, education and other important issues in the development of the city through course lectures, readings, discussion and presentations by guest speakers.

**URSP 116. Introduction to the City. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduction to the various theories of urbanism and attempt to offer solutions to the problems of urban life in modern civilization. The course will survey the major works of those who have studied cities or offered solutions and alternatives to existing urban structures. The works of noted social reformers, political analysts, economists, and architects as well as urban planners will be examined through lectures, readings, films, slides, discussions and field trips (when feasible).

**URSP 120. Urban Issues in Film. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduces students to a variety of themes in urban studies through the medium of film. Focusing on a selection of films and related readings, the course exposes students to critiques of the socioeconomic, historical, political and structural aspects of cities and regions.

**URSP 203. Physical Geography: Weather, Climate and Biogeography. 3 Hours.**

Semester courses; 3 lecture hours. 3 credits. Analysis of the interrelated systems of the earth. Content includes the earth in space, atmosphere, climate and vegetation.

**URSP 204. Physical Geography: Geomorphology and Soils. 3 Hours.**

Semester courses; 3 lecture hours. 3 credits. Analysis of the interrelated systems of the earth. Content includes earth materials, tectonics, weathering, erosion, landforms and soils.

**URSP 245. Housing and Community Revitalization. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The purpose of this course is to examine housing issues as a major determinant of the make-up and the quality of community life in modern American society. Attention is given to the public and private forces that influence various components of the housing issue, such as: demand for housing; housing availability to various economic and social groups; housing design and quality (including new construction, rehabilitation, historic preservation, and adaptive re-use), housing finance and the relationship of housing to planning in metropolitan areas.

**URSP 261. Design of the City. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Architecture, space and activities play a special role in the overall design of the city. These elements are analyzed to understand their interrelationships and importance to a city's visual character. Architectural styles, civic art, effects of space on the individual and methods for designing cities will be discussed. The class is for those who want to understand urban design elements and for those who will be involved in city design.

**URSP 302. Land Use and Infrastructure Planning. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: any 100-level (or higher) URSP course. Explores how the integration of land use, transportation and other infrastructures (e.g., water supply, waste water and storm water) in urban and regional planning can improve development patterns to ensure sustainability and livability. The historical development of land use, urban form and the various transportation modes that have shaped American cities are also studied.

**URSP 303. World Regions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of the various regions of the earth, including land forms, climate, resources, peoples, agriculture and urban conditions. Regions to be selected each semester from Anglo-America, Latin America, western Europe, Eastern Europe, the former USSR, Middle East and North Africa, Africa (south of the Sahara), Indian subcontinent, China, Japan, Southeast Asia, and Oceania. May be taken only once for credit. Crosslisted as: INTL 303.

**URSP 304. Urban Social Systems. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the growth and development of neighborhoods, cities and metropolitan systems. Analyzes origins of community interests and factors that affect the ability of communities to further their interests. Particular attention is given to how patterns of service delivery and the placement of public facilities affect community interest and whether federal or municipal departments are able to set adequate community service standards.

**URSP 306. Economic Geography. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Explores the workings of regional economies through analysis of industries and occupations. Studies the reasons for variation in regional economic characteristics and examines policies and strategies for enhancing regional economic conditions. Course relies heavily on the use of Microsoft Excel; proficiency with using this program is required.

**URSP 310. Introduction to Urban and Regional Planning. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: any 100- or 200-level URSP course. Introduction to theory and practice of governmental planning in the U.S. with emphasis on urban and regional planning. Surveys the history of planning, current planning practice and the ethical responsibilities of planners.

**URSP 312. History of Human Settlement. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A cultural and historical geography of human migration and settlement over the earth. Topics may include agricultural and urban systems, exploration, colonization and imperialism, and changing relationships with the environment, during and since the Middle Ages. Crosslisted as: ANTH 312.

**URSP 313. Research and Field Methods in Urban and Regional Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: STAT 210. Introduces students to a variety of field and research techniques used to gather and analyze information to study urban and regional issues. Key topics include designing a research project, developing and implementing surveys, conducting focus groups and observation, analyzing data statistically, interpreting and reporting results, and utilizing secondary information.

**URSP 315. The Evolution of American Cities. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A general survey of how cities developed in the United States and the factors that contributed to the process of urbanization. Emphasis is placed on the public attitudes and values that have dominated particular periods of history and how these values affected the efforts to urbanize. The American city is examined as a vital force in the economic, social and political development of modern America, as the major location for conflict between people of all persuasions, and as the home of much of what is meant by American "civilization."

**URSP 316. Urban Life in Modern America. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Restricted to nonmajors. Examines how a modern city functions, the public services rendered within the city and the impact of public policy on the city. The city is treated as a system consisting of economic, social and political activities that influence and are influenced by the physical/demographic environment. Each activity is studied separately with the cause-effect relationships among the activities highlighted by an analysis of public service delivery and, more generally, urban public policy.

**URSP 321. Urban Economics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 203 with a minimum grade of B or ECON 210. An introduction to urban economics, with an emphasis on the economics of agglomeration and the role of externalities in the urban economy. Economic analysis of the provision of urban public services and urban public financing, especially in politically fragmented areas. Crosslisted as: ECON 321.



**URSP 322. Urban Finance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GEOG/URSP 306. Treats the local government from a practical management perspective as an organization in a political-economic environment. The nature of city expenditures and sources of revenues are explored. Budgeting and taxing decision-making processes are explored in depth. Economic impacts of these decisions on citizens are analyzed and implications for practice drawn.

**URSP 331. Geography of Latin America and the Caribbean. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines the physical and human geography of Latin America and the Caribbean from an interdisciplinary perspective. A systems approach is used to concentrate on particular topics, themes and patterns that have broader relevance to the overall region or subregions (e.g. Central America, the Lesser Antilles, the Andes, Amazonia) rather than on the details of each country. However, in relation to some topics, case studies are used that may focus on a particular country.

**URSP 332. Environmental Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GEOG 204 or URSP 204. An interdisciplinary review of domestic and international environmental problems and their underlying causes, current management frameworks, alternative management approaches and strategies, and barriers to their implementation. Other topics include: environmental history and economics, population growth, natural resources use, biodiversity, pollution. Crosslisted as: ENVS 332.

**URSP 333. Geography of Africa. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the land forms, climate, peoples, livelihoods, settlement patterns and cultural groupings of sub-Saharan Africa. Crosslisted as: AFAM 333/INTL 333.

**URSP 334. Regional Geography of \_\_\_\_\_. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A study of the land forms, climate, resources, peoples, agricultural and urban conditions in a specific region such as North America, Europe, Latin America, the Middle East and India, the USSR and Eastern Europe. See the Schedule of Classes for specific region to be studied each semester. Crosslisted as: INTL 334.

**URSP 340. World Cities Outside of North America. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines the role of cities in the development of a variety of geographical regions outside of North America. Consists of a broad overview of the historical evolution of cities, their internal structure and relation to the world system and urban problems. Crosslisted as: INTL 340.

**URSP 350. Great Cities of the World. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. May be repeated under different topics for a total of 6 credits. Prerequisite: sophomore standing or permission of instructor. An interdisciplinary course with a focus on the origin, expansion and significance of one or more cities, the specifics of its/their culture and the role of language. Particular emphasis will be placed on relating the physical, social and economic aspects of the city's growth and development to the cultural expression of urbanism. Crosslisted as: FRLG 345/INTL 345.

**URSP 360. Community and Regional Analysis and GIS. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduces students to the core functions and applications of geographic information systems. Trains students in the management, modeling, analysis and visualization of urban and regional georeferenced data. The GIS techniques covered include the classification and symbolization of geographic features, data querying, table and spatial joining, spatial selection, projections, creation and editing of spatial features, geocoding, spatial analysis, and mapping.

**URSP 391. Special Topics in Urban Studies. 1-3 Hours.**

Semester course; 1, 2 or 3 credits. Prerequisite: because of the changing subject matter to be treated in this course, permission of the instructor is required. Students will have an opportunity to examine in detail some questions of significance. See the Schedule of Classes for the specific topic to be offered each semester.

**URSP 392. Independent Study. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. Prerequisite: junior or senior standing is required. Under supervision of a faculty adviser, who must approve the student taking the course, a student studies a topic of interest.

**URSP 397. Independent Study. 2,3 Hours.**

Semester courses; 2 or 3 lecture hours. 2 or 3 credits. Prerequisite: junior or senior standing is required. Under supervision of a faculty adviser, whose consent is required to register, study a topic of concern to the student. Examines the role of cities in development of a variety of geographical regions outside of North America.

**URSP 398. Independent Study. 2-3 Hours.**

Semester courses; 2 or 3 lecture hours. 2 or 3 credits. Prerequisite: junior or senior standing is required. Under supervision of a faculty adviser, whose consent is required to register, study a topic of concern to the student. Examines the role of cities in development of a variety of geographical regions outside of North America.

**URSP 413. Policy Implementation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An examination of the administrative setting of government and its policy impacts on public programs, policy design and redesign, and evaluation and monitoring.

**URSP 420. Regional Planning and Sustainable Development. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GEOG 102 or URSP 102. Explores the factors, both historical and contemporary, that influence the socioeconomic and environmental characteristics of national and sub-national regions, mainly in the developing world. Analyzes development problems and strategies from various theoretical perspectives, and examines the impacts of policy and planning interventions on regional conditions.

**URSP 425. Labor, Employment and Regional Development. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines the role of employment and the workforce in regional development from social, economic and geographic perspectives. Explores the factors impacting U.S. employment patterns, such as the green economy, immigration and technological change, and their implications for workers and regional economies. Also examines policy approaches to address labor and workforce issues with special consideration of disadvantaged groups and communities.

**URSP 440. Senior Capstone Seminar in Urban and Regional Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: senior standing. Synthesizes knowledge from previous major courses and applies it to a practical application in the field. Also explores issues related to career planning.

**URSP 461. Applied Planning Studio. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: all core courses in the urban and regional studies program. Applying the principles and theories of urban studies, students work as a group in the preparation of a plan to address a real community problem.



## Urban Studies and Planning Lab (URSZ)

### URSZ 203. Physical Geography Laboratory: Weather, Climate and Biogeography. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: URSP 203. Problem-solving and map-reading exercises related to earth-sun relationships, atmosphere, weather and climate, vegetation and soils.

### URSZ 204. Physical Geography Laboratory: Geomorphology and Soils. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: URSP 204. Problem-solving and map-reading exercises related to earth materials, tectonics, weathering, erosion and landforms.

## School of Medicine

### Anatomy and Neurobiology (ANAT)

#### ANAT 301. Head and Neck Anatomy for Dental Hygienists. 3 Hours.

2 lecture and 1 seminar hours. 3 credits. An overview of head and neck anatomy that examines the major osteological, neural, muscular, vascular and visceral features. Lectures will be supplemented by textbook, self-study packages and by brief laboratory exercises that provide hands-on exposure to these major anatomical features.

#### ANAT 302. Microscopic Anatomy (Dental Hygiene). 2 Hours.

8-week course; 3 lecture and 1 laboratory hours. 2 credits. A lecture course in the microscopic anatomy of the cells and tissues relevant to the oral cavity.

### Emergency Medical Sciences and Administration (EMSA)

#### EMSA 200. Introduction to EMS Systems. 3 Hours.

Semester course; 3 lecture hours. 3 credits. A survey of Emergency Medical Services systems in the U.S. Examines the 14 attributes of an EMS system to include the history of EMS, public and private organizations, delivery models, personnel, training and integration in the overall health care system.

#### EMSA 201. Emergency Medical Technician. 3 Hours.

Continuous courses; 4 lecture and 4 laboratory hours. 6-6 credits. Prerequisites: current CPR certification at the Health Care Provider level and permission of instructor; completion of EMSA 201 to enroll in EMSA 202. Students will learn to recognize the nature and seriousness of a patient's condition or extent of injuries, to assess requirements for emergency medical care, and to administer appropriate emergency medical care based on assessment findings of the patient's condition. Includes the lecture and laboratory elements needed to be eligible for certification as a Virginia and/or National Registry EMT-B as defined by the commonwealth of Virginia and the U.S. Department of Transportation's National Curriculum for EMTB.

#### EMSA 202. Emergency Medical Technician. 3 Hours.

Continuous courses; 4 lecture and 4 laboratory hours. 6-6 credits. Prerequisites: current CPR certification at the Health Care Provider level and permission of instructor; completion of EMSA 201 to enroll in EMSA 202. Students will learn to recognize the nature and seriousness of a patient's condition or extent of injuries, to assess requirements for emergency medical care, and to administer appropriate emergency medical care based on assessment findings of the patient's condition. Includes the lecture and laboratory elements needed to be eligible for certification as a Virginia and/or National Registry EMT-B as defined by the commonwealth of Virginia and the U.S. Department of Transportation's National Curriculum for EMTB.

#### EMSA 300. Foundations of Paramedic Practice. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Open only to EMSA majors. Prerequisites: EMSA 200, 201-202. Foundation course covering medical ethics, medical legal issues, wellness and injury prevention, life span development, and communication with patients. Also reviews the anatomy and physiology of the airway and respiratory system, the assessment and establishment of airway including basic and advanced airway management.

#### EMSA 310. Clinical Practicum I. 2 Hours.

Semester course; 2 laboratory hours. 2 credits. (90-hour minimum.) Open to EMSA majors only. Corequisites: EMSA 310, 320, 400 and 405. First in a series of three application courses. Requires the student to apply the concepts being learned in the classroom to their patients under the supervision of a preceptor in hospital clinical areas. Covers professional behavior while acquiring and analyzing the patient's history, performing a comprehensive physical examination of different developmental and ethnic groups, performing appropriate medication administration and management of the patient's airway.

#### EMSA 320. Field Practicum I. 2 Hours.

Semester course; 2 laboratory hours. 2 credits. (90-hour minimum.) Open to EMSA majors only. Corequisites: EMSA 310, 320, 400 and 405. First in a series of three application courses. Requires the student to apply the concepts being learned in the classroom to their patients under the supervision of a preceptor in a mobile intensive care unit. Covers professional behavior while acquiring and analyzing the patient's history, performing a comprehensive physical examination of different developmental and ethnic groups, performing appropriate medication administration and management of the patient's airway. Develops the ability to team lead and manage a basic incident.

#### EMSA 340. Fundamentals of Pathophysiology. 2 Hours.

Semester course; 2 lecture hours. 2 credits. Open to EMSA majors only. Foundation course for subsequent courses on specific disease processes. Covers cellular metabolism, disease processes, shock, Multi Organ Dysfunction Syndrome (MODS), the immune system and inflammatory response.

#### EMSA 360. Field Operations and Safety. 3 Hours.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Open to EMSA majors only. The student will learn how to manage an incident and implement patient care in the pre-hospital environment. Students will integrate the principals of general incident management, management of mass casualty incidents and the safe rescue of patients from water, below grade, highway and hazardous situations.

#### EMSA 400. Principals of Pharmacology. 4 Hours.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Open to EMSA majors only. Presents the classification of pharmaceuticals, pharmacokinetics and pharmacodynamics of medications. Integrated discussion of agents used for the peripheral and central nervous systems, and respiratory, cardiovascular, gastrointestinal and endocrine systems are addressed. Integrates these agents with the pathophysiology of each body system to form a plan for management and administration. The application of drug dosage calculations, medication preparation, sterile technique and standard precautions for the preparation and administration of medications.

**EMSA 401. Pediatric Advanced Life Support (PALS). 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: certification/licensure as a paramedic, R.N., M.D., D.O., dentist, physician's assistant, or enrolled as a paramedic, medical or nursing student. A comprehensive course that emphasizes early recognition of pre-arrest states and the prevention of cardiopulmonary arrest according to American Heart Association guidelines. Covers relevant priorities and techniques that enable effective intervention in pediatric resuscitation by physicians, nurses, paramedics and other health care workers who are licensed to do advanced practice intervention, including airway management, vascular access and intravenous fluid and medication administration.

**EMSA 402. Advanced Cardiac Life Support (ACLS). 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: certification/licensure as a paramedic, R.N., M.D., D.O., dentist, physician's assistant, or enrolled as a paramedic, medical or nursing student. A comprehensive course that emphasizes early recognition of pre-arrest states and the prevention of cardiopulmonary arrest according to American Heart Association guidelines. Covers relevant priorities and techniques that enable effective intervention in adult cardiac resuscitation by physicians, nurses, paramedics and other health care workers who are licensed to do advanced practice intervention, including airway management, vascular access and intravenous fluid and medication administration.

**EMSA 405. Advanced Patient Assessment. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Open to EMSA majors only. Covers the acquisition and analysis of patients' histories and advanced physical assessments. Encompasses normal and abnormal variations of different developmental and ethnic groups to perform a comprehensive history and physical to form a clinical diagnosis. Incorporates appropriate documentation and communication through written, verbal and direct patient contact.

**EMSA 411. Clinical Practicum II. 2 Hours.**

Semester course; 2 laboratory hours. 2 credits. (90-hour minimum.) Open to EMSA majors only. Corequisites: EMSA 340, 360, 441 and 443. Requires the student to apply the concepts being learned in the classroom to their patients under the supervision of a preceptor in hospital clinical areas. Covers professional behavior while acquiring and analyzing the patient's history, performing a comprehensive physical examination of different developmental and ethnic groups, performing appropriate medication administration and management of the patient's condition.

**EMSA 412. Clinical Practicum III. 2 Hours.**

Semester course; 2 laboratory hours. 2 credits. (90-hour minimum.) Open to EMSA majors only. Corequisites: EMSA 430, 440, 442 and 450. Requires the student to apply the concepts being learned in the classroom to their patients under the supervision of a preceptor in hospital clinical areas. Covers professional behavior while acquiring and analyzing the patient's history, performing a comprehensive physical examination of different developmental and ethnic groups, performing appropriate medication administration and management of the patient's condition.

**EMSA 421. Field Practicum II. 2 Hours.**

Semester course; 2 laboratory hours. 2 credits. (90-hour minimum.) Open to EMSA majors only. Corequisites: EMSA 340, 360, 441 and 443. Focuses on the patient presenting with cardiopulmonary, obstetrical and gynecological pathologies, and pediatric patients, under the supervision of a preceptor in a mobile intensive care unit. Requires the synthesis of the assessment of the pathology to form a clinical diagnosis and treatment plan for each patient. Demonstrates the ability to assess, perform and coordinate advanced patient care under supervision.

**EMSA 422. Field Practicum III. 2 Hours.**

Semester course; 2 laboratory hours. 2 credits. (90-hour minimum.) Open to EMSA majors only. Corequisites: EMSA 430, 440, 442 and 450. Focuses on the patient presenting with medical complaints or traumatic injury patients under the supervision of a preceptor in a mobile intensive care unit. Requires the synthesis of the assessment of the pathology to form a clinical diagnosis and treatment for each patient. Demonstrates the ability to assess, perform and coordinate advanced patient care under supervision.

**EMSA 430. Trauma. 4 Hours.**

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Open to EMSA majors only. A comprehensive course integrating the anatomy, pathophysiology, epidemiology, mortality and morbidity of trauma. Covers the structure of trauma care systems, kinematics and epidemiology of trauma. Integrates the assessment, clinical diagnosis, development and application of a management plan for patients with hemorrhage, shock, burns, head, thoracic, abdominal, musculoskeletal and spinal injuries.

**EMSA 440. Medical Emergencies. 4 Hours.**

Semester course; 4 lecture hours. 4 credits. Open to EMSA majors only. Integrates the assessment, clinical diagnosis, development and application of a management plan for patients with needs in the following systems: endocrine, gastrointestinal, urological, neurological and hematological. Will also encompass patients presenting with toxicological, environmental and behavioral/psychiatric emergencies.

**EMSA 441. Basic Electrocardiography. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Permission of instructor required. Reviews the relevant anatomy, physiology and electrophysiology of the cardiac system. The acquisition, interpretation and diagnosis of cardiac dysrhythmias using three-lead electrocardiograms will be covered.

**EMSA 442. Advanced Electrocardiography. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisites: EMSA 441 or equivalent and permission of instructor. Reviews the relevant anatomy, physiology and electrophysiology of the cardiac system. The acquisition, interpretation and diagnosis of cardiac dysrhythmias using 12-lead electrocardiograms will be covered.

**EMSA 443. Cardiopulmonary Medicine. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Open to EMSA majors only. A comprehensive course integrating the anatomy, pathophysiology, epidemiology, mortality and morbidity of cardiopulmonary pathologies into the assessment, clinical diagnosis, development and application of a management plan.

**EMSA 445. Assessment-based Management. 4 Hours.**

Semester course; 4 lecture hours. 4 credits. Open to EMSA majors only. Students will synthesize and integrate the pathophysiological principles with assessment results to formulate a clinical impression, then develop and implement an appropriate treatment plan on a programmed patient or manikin. Patient complaints will be inclusive of the materials presented in previous courses for pediatric, adult and geriatric patient populations.

**EMSA 450. Obstetrics, Gynecology and Pediatrics. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Open to EMSA majors only. A comprehensive course integrating the anatomy, pathophysiology, epidemiology, mortality and morbidity of women and children into the assessment, clinical diagnosis, development and application of a management plan for women with gynecological emergencies, normal pregnancies and deliveries, and abnormal pregnancies and deliveries. Will also integrate the assessment, diagnosis and management of the neonatal and pediatric patient for medical and traumatic injuries and illness.

**EMSA 460. EMS Operations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Topics presented include medical incident command, national incident management systems, post-9/11 issues and needs, interoperation with other agencies, interoperability of communications between agencies, deployment methods, OSHA regulations at incident scenes and field supervision.

**EMSA 461. EMS Supervision and Human Resources. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The principles of personnel management and processes for effective EMS organizations are explored. Employment regulations, job analysis, performance assessment, recruitment and retention, training and development, employee and labor relations. Also presented are the factors and processes relating to paid and volunteer personnel, medical directors, shift schedules and general personnel issues.

**EMSA 462. Management of EMS Organizations. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines theory, processes and techniques needed to manage the EMS agency. Will address regulatory, management, finance, reimbursement, legislation, regulation and other contemporary issues affecting EMS organizations.

**EMSA 463. Legal Issues in Health Care. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Examines basic principles and practices of law affecting EMS operations of ground and air transport systems. Topics will include the legal aspects of patient care and treatment, medical services, and hospital-patient related functions and health care and public safety employment law.

**EMSA 464. Research and Quality Improvement. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A review of published research in EMS. Selected studies will be reviewed with respect to their methodology, statistics, measurement and design. Basic research principles, scientific theory and the ability to critically interpret peer-reviewed literature will be emphasized.

**EMSA 465. EMS Education. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The principles of adult education and training will be presented. Topics will include domains of learning, principles of adult learning, construction of lesson plans and use of current technology for presentation of content. Dealing with barriers to effective education and special considerations for non-traditional teaching and learning settings will be presented. Students will prepare and function as assistant instructors in other EMS education programs.

**EMSA 466. Injury Prevention and Control. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introduction to public health principles and an overview of injury prevention principles for EMS personnel and the community. Review of epidemiological principles and patterns of injuries related to occupation, transportation, interpersonal violence and related incidents. Emphasis will be placed on prevention of injuries. The success of fire prevention will be explored as an example. The role of public health and EMS in the post-9/11 world will be examined.

**EMSA 470. Summative Field Internship. 1 Hour.**

Semester course; 1 laboratory hour. 1 credit. (45-hour minimum.) May be repeated. Open to EMSA majors only. This is an evaluation of the student's ability to assess, perform and coordinate advanced patient care without the assistance of the preceptor.

**EMSA 471. Summative Senior Seminar. 3 Hours.**

Semester course; 3 credits. Open to EMSA majors only. The synthesis, integration and evaluation of the student's entire paramedic curriculum experience. Provides students with the opportunity to review and present their ability to assess, perform and coordinate advanced patient care. Prepares the student for transition into the profession.

**EMSA 472. Professional Issues in EMS. 3 Hours.**

Semester course; 3 credits. Open to EMSA majors only. Provides an overview of the current and potential issues facing EMS. Discussions and assignments are designed to enable the student to investigate and report on issues affecting delivery of health care, patient and provider safety, cost of care, research, legislation and issues affecting staffing and personnel.

**EMSA 474. Critical Care Transportation Provider I. 3 Hours.**

Semester course; 3 credits. Designed for the experienced paramedic or registered nurse. Objective is to offer formal training in the concepts and essential skills required for the treatment of critical care patients by ground or aeromedical mode. Topics covered include: flight physiology, aeromedical considerations, medical legal aspects, X-ray interpretation, lab data interpretation, hemodynamic monitoring, advanced airway management and mechanical ventilation, and a review of pathologies, assessment and management of medial and traumatically injured patients. Students must be paramedics, R.N.s or advanced providers and should have ALS certification for more than two years with current certification in ACLS, trauma life support, PALS and BLS health care provider.

**EMSA 475. Critical Care Transportation Provider II. 3 Hours.**

Semester course; 3 credits. A continuation of the concepts and ideas covered in EMSA 474.

**EMSA 476. Critical Care Transport Provider Practicum. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. Prerequisite: completion of EMSA 474. May be taken concurrently with EMSA 475. Focuses on the patient with complicated multisystem health problems in the critical care environment. Provides an opportunity for observation and integration of classroom concepts in a critical care area.

**EMSA 491. Special Topics. 4 Hours.**

Semester course; variable hours. 1-4 credits. A study of selected topics in EMSA. See the Schedule of Classes for specific topics to be offered each semester.

**EMSA 492. Independent Study. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. An independent study of selected topics in EMSA.

**Microbiology and Immunology (MICR)****MICR 365. Infection and Immunity (Dental Hygiene). 2 Hours.**

Semester course; 2 lecture hours. 2 credits. A study of infectious diseases and the immune system of humans with emphasis on the distribution properties and roles of pathogenic microorganisms and the varied responses of the host, with emphasis on oral pathologies. Principles of prevention, control and chemotherapy of infectious diseases are major components of the course.

## Pathology (PATH)

### PATH 445. Forensic Toxicology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 301-302 and CHEZ 301. Provides a comprehensive overview of the basic principles of toxicology and the practical aspects of forensic toxicology. Students will learn to define the toxic agents most commonly resulting in legal problems in U.S. society and also the process by which the U.S. judicial system is aided by scientific investigation. Crosslisted as: FRSC 445.

## Pharmacology and Toxicology (PHTX)

### PHTX 400. Drugs and their Actions. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior or senior standing, or permission of instructor. This course is a general survey of pharmacology and related disciplines. The history and basic principles are presented followed by discussions of neuropharmacology, psychoactive drugs, drugs of abuse, immunopharmacology, basic toxicology, drug design, drug development, autonomic pharmacology, cardiovascular pharmacology and endocrine pharmacology, as well as selected topics including scientific ethics, molecular pharmacology and behavioral pharmacology.

### PHTX 441. Pharmacology (Dental Hygiene). 5 Hours.

Semester course; 5 lecture hours. 5 credits. A didactic course designed to emphasize the principles of pharmacology and pain control, drug actions and uses, and adverse effects to provide the rationale for the effective and safe use of drugs in dental hygiene.

## Physiology and Biophysics (PHIS)

### PHIS 206. Human Physiology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 101 and BIOZ 101, BIOL 151 and BIOZ 151, or BIOL 152 and BIOZ 152, each with a minimum grade of C. Functioning of the human body with emphasis on experimental procedures.

### PHIS 301. Engaging in Undergraduate Research. 1 Hour.

Semester course; 1 seminar hour. 1 credit. Prerequisite: PHIS 206 or PHIS 309. This course will address the nature of research in the fields of physiology and biophysics and at the same time explore areas and laboratories at VCU that would offer undergraduate research opportunities.

### PHIS 309. Introductory Quantitative Physiology I. 4 Hours.

Semester course; 3 lecture hours and 3 laboratory hours. 4 credits. Prerequisite: calculus at the level of MATH 200 and MATH 201. The course is intended for majors in Biomedical Engineering. Other students may enroll with permission of the instructor. This course is a survey course in physiology with emphasis on physical principles. It is a systems analysis of cellular anatomy, physiology and biochemistry which leads into analysis of the nervous system, musculoskeletal system and the digestive system. It is meant to be taken as part of a two-semester series with PHIS 310.

### PHIS 310. Introductory Quantitative Physiology II. 4 Hours.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: calculus at the level of MATH 200 and MATH 201 and PHIS 309. The course is intended for majors in biomedical engineering. Other students may enroll with permission of the instructor. This course is the second semester of a survey course in physiology with emphasis on physical principles. It includes a systems analysis of the cardiovascular, respiratory, renal and endocrine systems. It is meant to be taken as part of a two-semester series with PHIS 309.

### PHIS 461. Introduction to Human Physiology. 3 Hours.

3 lecture hours. 3 credits. Prerequisites: biology, general chemistry and human anatomy. An introductory course to human physiology based on an analysis of organ systems.

## Physiology Lab (PHIZ)

### PHIZ 206. Human Physiology Laboratory. 1 Hour.

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: PHIS 206. Functioning of the human body with emphasis on experimental procedures. Not applicable for credit toward the B.S. in Biology.

## School of Nursing

## Nursing (NURS)

### NURS 201. Concepts of Professional Nursing. 2 Hours.

Semester course; 2 lecture hours. 2 credits (2 credits lecture). Prerequisite: admission to the School of Nursing. Provides a foundation for all clinical nursing courses. Content focuses on professionalism, professional nursing values and health care delivery. The core competencies identified by the Institute of Medicine for health care professionals are introduced as critical components of professional nursing practice, and selected concepts related to these core competencies are emphasized. Course activities are structured to establish effective professional behaviors and learning strategies useful across one's professional career.

### NURS 202. Technologies of Nursing Practice. 6 Hours.

Semester course; 3 lecture and 90 clinical/laboratory hours. (3 credits lecture and 3 credits clinical/laboratory). 6 credits. Prerequisite: admission to the School of Nursing. This course introduces the student to the study and application of skills and interventions basic to nursing practice. Content focuses on the development of cognitive, psychomotor, affective, interpersonal and communication skills to become effective members of the collaborative health care team. Students will learn how the concepts of nursing process and evidence-based clinical decision-making are integrated into practice. Opportunities are provided for practice and demonstration of selected skills in the laboratory and in clinical settings. This course emphasizes techniques for the safe acquisition and management of patient information.

### NURS 261. Health Assessment for Nursing Practice. 3 Hours.

Semester course; 2 lecture and 30 clinical/lab hours. 3 credits (2 credits lecture and 1 credit clinical/lab). Prerequisite: PHIS 206. Pre- or corequisite: NURS 201. Enrollment requires admission to the School of Nursing. This course builds on the biopsychosocial sciences and focuses on development of knowledge, skills and techniques necessary for history-taking and physical examination in adults. Students are introduced to the nursing process and diagnostic reasoning skills are developed through analysis and documentation of assessment data. A laboratory experience provides opportunities for students to integrate communication and problem-solving skills with the health assessment process. The course focuses on the healthy adult patient and emphasizes the diversity of patient populations in health care settings.

### NURS 301. Nursing Informatics. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisite: admission to the School of Nursing. This course focuses on data management and use of information and technology to communicate effectively, provide safe and effective patient care and use research and clinical evidence to inform nursing practice decisions. The course emphasizes information literacy and its application to nursing practice and effective health care delivery. Course delivered online.



**NURS 305. Knowledge Validation by Portfolio. 3 Hours.**

Semester course; 3 credits. Prerequisite: acceptance into the RN Completion Program and/or faculty recommendation. Culminates in submission of a portfolio for validation of course-specific knowledge and evaluation for full or partial credit. Elective. RN students only. Involves self-assessment of prior learning for RN. Requires correlation of experiential and theoretical knowledge with objectives of selected nursing courses.

**NURS 307. Foundations of Professional Nursing I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: admission to the School of Nursing. Corequisite: NURS 301. This course explores historical and contemporary trends influencing professional nursing practice within the U.S. health care system. The course focuses on research within the context of nursing's development as a profession and discipline and within the context of evidence-based practice. The research process and analysis of research studies are emphasized. Course delivered online.

**NURS 308. Foundation of Professional Nursing II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: NURS 301 and NURS 307, both with minimum grades of C. This course focuses on the impact of regulation and accreditation on safe patient care delivery. The course emphasizes concepts related to professional nursing practice and explores selected internal and external forces that influence health care delivery. Students will evaluate current nursing practice within the context of previous nursing education and professional nursing standards. Upon successful completion of this course, proficiency credits for prior nursing education will be conferred. Course delivered online.

**NURS 309. Population Health. 3 Hours.**

Semester course; 3 credits lecture. 3 credits. Prerequisites: admission to School of Nursing and NURS 301 and NURS 307, both with minimum grades of C. This course focuses on core concepts of population health. Socioeconomic, lifestyle, environmental, genetic and other major determinants of population health are examined. The nurse's role in health promotion, disease and injury prevention across the lifespan are emphasized. The importance of collaboration with populations and other health care professionals is highlighted. Course delivered online.

**NURS 325. Nursing of Adults I. 6 Hours.**

Semester course; 3 lecture and 90 clinical hours. 6 credits (3 credits lecture and 3 credits clinical/laboratory). Prerequisites: NURS 201, NURS 202 and NURS 261. All prerequisites must be completed with a minimum grade of C. Focuses on adult and geriatric patients with acute and chronic physical illnesses that have relatively stable trajectories. Provides theoretical and evidence-based foundations for nursing management and related therapeutic regimens. Emphasizes clinical decision-making and technical skills in the provision of care to adult and geriatric patients in a variety of health care settings.

**NURS 335. Nursing of Women. 5 Hours.**

Semester course; 3 lecture and 60 clinical/laboratory hours. 5 credits (3 credits lecture and 2 credits clinical/laboratory). Prerequisites: NURS 201, NURS 202 and NURS 261. All prerequisites must be completed with a minimum grade of C. Examines the health needs of women across the life span with an emphasis on the health needs of the childbearing family. Applies nursing process, theory and research with an emphasis on the development of critical thinking skills in the diagnosis and treatment of human responses to health needs of women, neonates and families. Practices clinical skills and applies theoretical knowledge in selected ambulatory care settings for women's health and post-discharge care, and hospital settings for antenatal, intrapartum, post-partum and neonatal experiences.

**NURS 345. Nursing of Children. 5 Hours.**

Semester course; 3 lecture and 60 clinical/laboratory hours. 5 credits (3 credits lecture and 2 credits clinical/laboratory). Prerequisites: NURS 201, NURS 202 and NURS 261. All prerequisites must be completed with a minimum grade of C. Examines the health needs of children within the context of the family system, environment, developmental capability, stress and adaptation. Focuses on application of evidence, the nursing process, written and oral communication skills and critical thinking when giving nursing care to well and ill children. Applies current theory and evidence to children and their families in clinical experiences. Reinforces standards of care for both well and ill children and their families.

**NURS 355. Psychiatric-Mental Health Nursing. 5 Hours.**

Semester course; 3 lecture and 60 clinical hours. 5 credits (3 credits lecture and 2 credits clinical laboratory). Prerequisites: NURS 201, NURS 202 and NURS 261. All prerequisites must be completed with a minimum grade of C. Examines theoretical, empirical and practical knowledge applied to the prevention and treatment of common psychiatric and mental health conditions encountered in basic nursing practice. Provides students with an integrative perspective from which to incorporate various frameworks of knowledge into practice. Provides didactic knowledge and clinical learning experiences to facilitate students' understanding of actual and potential psychiatric illnesses and mental health problems in individuals, families and communities.

**NURS 365. PATHOPHYS & PHARMACOL I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits (3 credits lecture). Prerequisites: anatomy, physiology and microbiology; BIOL 205, PHIS 206, BIOL 209 and admission to the School of Nursing. Introduces general and foundational principles in pathophysiology and pharmacology. Examines pathophysiological mechanisms selected diseases, syndromes and/or conditions and integrates related pharmacotherapeutics. Establishes a biophysiological basis for understanding relevant clinical assessments, clinical manifestations and disease trajectories. Provides a foundation for establishing physiological priorities for nursing care.

**NURS 366. Pathophysiology and Pharmacology II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits (3 lecture credits). Prerequisite: NURS 365 completed with a minimum grade of C. Examines pathophysiological mechanisms in selected human systems diseases, syndromes and/or conditions and integrates related pharmacotherapeutics. Establishes a biophysiological basis for understanding relevant clinical assessments, clinical manifestations and disease trajectories. Provides a foundation for establishing physiological priorities for nursing care.

**NURS 367. Applied Principles of Health and Disease. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: anatomy and physiology; BIOL 205 and PHIS 206. All prerequisites must be completed with a minimum grade of C. Expands on a foundation of basic knowledge of normal functioning and common pathophysiological conditions. Based on common principles of health and disease: homeostasis and disruptions of homeostasis, growth cycles, communication of information, and repair and regeneration. Develops a foundation of current knowledge in the area of physiology/pathophysiology for practice.



**NURS 371. Evidence-based Practice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: STAT 210, NURS 201, NURS 202. All prerequisites must be completed with a minimum grade of C. This overview course focuses on the knowledge and skills required to enact evidence-based practice over one's professional life. Students will examine the relevance of nursing research to evidence-based practice as they review important research concepts and identify factors affecting utilization of evidence in practice. The course formally introduces a model for evidence-based practice with an emphasis on the components of searching for, appraising and synthesizing best evidence.

**NURS 396. Nursing Internship. 1-5 Hours.**

Semester course; 120 clinical hours per credit. Variable credit. May be repeated. Prerequisites: NURS 325, NURS 335, NURS 345, NURS 355, NURS 365, NURS 366 and NURS 371. All prerequisites must be completed with a minimum grade of C. Provides combination supervised clinical experience and paid work experience in selected settings of the VCU Medical Center. Many of these settings are not available in traditional curriculum. Introduces students to the work life of a nurse.

**NURS 397. International Comparison of Nursing Education and Clinical Care. 1 Hour.**

Semester course; 30 clinical hours. 1 credit (1 credit clinical/lab). Enrollment restricted to students in the nursing program of the University of Cordoba or VCU. This course focuses on a comparison of the nature of nursing in two countries: the United States and Spain. Specifically, the course focuses on comparing and contrasting the health care systems and examining the nursing education systems and nursing student experiences in Spain and the U.S. Students from the University of Cordoba will engage in clinical simulations designed to expose them to the high fidelity simulators used in U.S. schools. Additionally, students from both schools will engage in guided observation of nursing care provided to patients in acute care settings and citizens within community-based settings.

**NURS 403. Evidence-based Practice in Health Care. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: NURS 308 with a minimum grade of C. This course formally introduces models for evidence-based practice, examines hierarchies of evidence, reviews change theories useful to initiate EBP and identifies individual and organizational resources needed for EBP. Emphasis is on developing skills in retrieving and appraising literature relevant to clinical problems, understanding the research process and critiquing evidence from research publications and other sources to inform evidence-based nursing practice. Course delivered online.

**NURS 406. Interprofessional Collaborative Practice. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: NURS 308 with a minimum grade of C. Explores the necessity for interprofessionalism in the contemporary health care environment. Core competencies and best practices for interprofessional collaborative practice are emphasized. Participation in virtual team activities provides students with opportunities to apply interprofessional knowledge, skills and attitudes that improve practice and impact patient care outcome. Course delivered online.

**NURS 407. Using Evidence in Clinical Practice. 2 Hours.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: NURS 301 and NURS 307. All prerequisites must be completed with a minimum grade of C. Focuses on skills required to enact evidence-based practice (EBP) over one's professional life, including synthesis of appropriate evidence for use in practice. Formally introduces models for EBP, reviews change theories useful to initiate EBP and identifies individual and organizational resources needed for EBP.

**NURS 408. Ethics, Law and Public Policy: Application to Nursing Practice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: NURS 308 with a minimum grade of C. This course examines ethics, law and public policy that influence nursing practice and the nature and function of the health care system. The emphasis of the course will be on the role of the professional nurse as advocate for patients, families, communities and the nursing profession, as well as an advocate for changes in the health care system as needed. Course delivered online.

**NURS 409. Population Health: Application to Nursing Practice. 2 Hours.**

Semester course; 60 clinical hours. 2 credits (2 credits clinical/lab). Prerequisites: NURS 308 and NURS 309, both with minimum grades of C. This course provides opportunity to apply core concepts of population health in a community within the framework of the nursing process. Epidemiological and population-level data will be used to develop and/or guide interventions in the management of care. The course emphasizes evidence-based approaches to achieving sustainable population health outcomes. Course delivered online.

**NURS 410. Applied Ethics in Clinical Practice. 3 Hours.**

Semester course; 3 lecture hours. 3 credits (3 credits lecture). Prerequisite: NURS 301. All prerequisites must be completed with a minimum grade of C. Identifies and examines ethical and moral dilemmas encountered in professional nursing practice. Examines personal value systems related to nursing ethics. Discusses relationships between professional nursing and resolution of moral dilemmas. Applies ethical principles to selected dilemmas in clinical nursing practice including patients' rights, informed consent, confidentiality, quality of life, and death and dying.

**NURS 415. Community Health Nursing: Theory and Application. 5 Hours.**

Semester course; 5 lecture hours. 5 credits. Prerequisites: NURS 301, NURS 307. All prerequisites must be completed with a minimum grade of C. Through this course, which includes 45 hours of community health field experiences, the student will develop an understanding of population-focused nursing based on the scope and core functions of public health. The course provides theoretical content essential to the assessment, planning, implementation and evaluation of the health of communities. The course utilizes an epidemiological approach to population-focused nursing. The course emphasizes the study and application of community health nursing roles for health promotion and disease prevention. The course also evaluates the effects of contemporary issues and health policy on the public's health.

**NURS 416. Community Health Nursing. 5 Hours.**

Semester course; 3 lecture and 60 clinical hours. 5 credits (3 credits lecture and 2 credits clinical laboratory). Prerequisites: NURS 325, NURS 335, NURS 345, NURS 355, NURS 365, NURS 366 and NURS 371. All prerequisites must be completed with a minimum grade of C. Develops knowledge for care of communities and populations based on the core functions of public health. Provides theory essential to the assessment, planning, implementation and evaluation of communities. Emphasizes the study and application of community health nursing roles for health promotion and disease prevention. Concentrates on an epidemiological approach to population-focused nursing. Evaluates the effects of contemporary issues and health policy on the public's health. Directs an evidence-based service-learning project to prevent disease and promote and preserve the health of populations at risk.

**NURS 425. Nursing of Adults II. 6 Hours.**

Semester course; 3 lecture and 90 clinical hours. 6 credits (3 credits lecture and 3 credits clinical laboratory). Prerequisites: NURS 325, NURS 335, NURS 345, NURS 355, NURS 365, NURS 366 and NURS 371. All prerequisites must be completed with a minimum grade of C. Focuses on the patient in acute phases of physical illnesses and with complicated multisystem health problems. Provides theoretical and evidence-based foundations for nursing management and related therapeutic regimens. Focuses on the development and application of clinical decision-making and an evidence-based model in the provision of care to acutely ill adults in a variety of settings.

**NURS 461. Advanced Clinical Assessment. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: NURS 301. All prerequisites must be completed with a minimum grade of C. Expands existing physical and psychosocial assessment skills to address selected complex patient problems. Focuses on acquisition of clinical evidence for assessment of rapidly changing situations, patient risk and situations related to patient safety. Critical analysis of patient data, prioritization of patient needs and effective communication are emphasized.

**NURS 462. Advanced Pathophysiological Concepts: Application to Patient Care. 3 Hours.**

Semester; 3 lecture hours. 3 credits. Prerequisites: NURS 308 and NURS 403, both with minimum grades of C. This course expands on basic knowledge of normal physiology and common pathophysiologic conditions across the lifespan. The course focuses on advanced knowledge of pathophysiology in relation to complex health care conditions. Integration of appropriate assessment skills and evidence-based pharmacologic and non-pharmacologic interventions are highlighted. The nurse's role in anticipating complications and evaluating clinical outcomes is emphasized. Course delivered online.

**NURS 477. Leadership and Management in Health Care. 4 Hours.**

Semester course; 4 lecture hours. 4 credits. Prerequisites: NURS 308, NURS 309 and NURS 403, all with minimum grades of C; corequisite: NURS 406. This course examines principles of leadership and management that facilitate coordination and implementation of safe, quality-oriented and ethical patient care. The course emphasizes development of leadership competencies within contexts of the nursing community and interprofessional team in a variety of settings within the contemporary health care delivery system. Course delivered online.

**NURS 478. Leadership and Management in Health Care: Theory and Application. 6 Hours.**

Semester course; 3 lecture and 90 clinical/laboratory hours (3 credits lecture and 3 credits clinical/laboratory). 6 credits. Prerequisites: NURS 325, NURS 335, NURS 345, NURS 355, NURS 365, NURS 366 and NURS 371, all completed with a minimum grade of C. Integrates principles of leadership and management to prepare students for management, coordination and implementation of safe and ethical patient care in contemporary health care delivery systems. Based on an understanding of nursing's development as a profession, advances enactment of professionalism. Precepted clinical experiences provide opportunities to apply leadership and management principles to nursing practice in a variety of settings and specialty areas.

**NURS 488. Practicum in Clinical and Management Decision-making. 3 Hours.**

Semester course; 3 clinical hours (90 clinical/laboratory hours). 3 credits. Prerequisites: NURS 406, NURS 462 and NURS 477, all with minimum grades of C. This course is designed as the culminating or capstone experience for the R.N.-to-B.S. completion program. This preceptor-supervised practicum provides opportunities to evaluate outcomes of baccalaureate education within the context of the clinical practice setting, to apply leadership principles and change theories to clinical and management decision-making, to employ concepts of quality and safety, and to use quality improvement processes in the health care setting. Course delivered online.

**NURS 491. Special Topics Course. 1-6 Hours.**

Semester course; 1-6 lecture hours. 1-6 credits (1-6 credits lecture). Prerequisites: admission to the School of Nursing and permission of instructor. An in-depth exploration of specific topics in nursing theory and practice.

**NURS 492. Elective Study. 1-5 Hours.**

1-5 credits. Prerequisite: admission to the School of Nursing. Independent study projects planned to meet the learning objectives of the student.

**NURS 496. Senior Synthesis. 7 Hours.**

Semester course; 2 lecture and 150 clinical hours. Honors section only: 2 lecture, 1 seminar and 150 clinical hours. 7 credits (2 credits lecture and 5 credits clinical laboratory). Honors section: 8 credits (2 credits lecture, 1 credit seminar [2 contact hours] and 5 credits clinical laboratory). Prerequisites: NURS 325, NURS 335, NURS 345, NURS 355, NURS 365, NURS 366, NURS 371, NURS 425 IPEC 501 IPEC 502. Honors section prerequisite: NURS 512. All prerequisites must be completed with a minimum grade of C. This course is designed as a culminating experience that meets the criteria of the third tier of the VCU Core Curriculum. It prepares students for successful transition into professional practice; thus it requires higher-level cognitive processes that include synthesis of knowledge, evidence and skills from all previous course work and clinical experiences. The course requires that the student consistently enact professional practice demonstrate competency in standards of care, application of evidence, professionalism and safe and legal practice. This course is taken during the last semester of the nursing program.

## School of Pharmacy

### Medicinal Chemistry (MEDC)

**MEDC 310. Medicinal Chemistry and Drug Design. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CHEM 302. This course is designed to expose undergraduate chemistry, biology and pre-medicine majors to the history, theory and practice of medicinal chemistry. The course will emphasize a combination of fundamentals and applications of drug design. In particular, the molecular aspects of drug action will be discussed. Special emphasis will also be placed on the methods used by medicinal chemists to design new drugs. Crosslisted as: CHEM 310.

### Pharmacy (PHAR)

**PHAR 201. Introduction to Pharmacy. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Open to undergraduate students with an interest in pursuing pharmacy as a career. Consists of presentations related to the profession of pharmacy and the pharmaceutical sciences, preparing for admission to the School of Pharmacy and employment opportunities in the profession after graduation. Graded as pass/fail.

## School of Social Work

### Social Work (SLWK)

#### **SLWK 200. Building a Just Society. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Course will introduce students to social justice issues in a local context with a focus on expanding and deepening their knowledge and skills to effect change through active engagement in the community. Course promotes an understanding and critical analysis of multiple forms of oppression in social systems and in personal experience using professional social work perspectives and theoretical frameworks. Selected reference materials and experiential learning activities are designed to enhance student understanding of what constitutes a just community and a just society. The course may be offered as service-learning.

#### **SLWK 201. Introduction to Social Work. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Systematic overview of the social work profession. Knowledge of the nature of social work, the fields of social work practice, target populations, overview of social work methods.

#### **SLWK 230. Communication in the Helping Process. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The study of the knowledge, skills and values of effective human communication and interpersonal relations. Includes observation, collection and description of data, verbal and nonverbal communication and the relevance of the above to social work practice. Integrates issues of human diversity in all course content. Emphasizes the demonstration and practice of communication through structured exercises.

#### **SLWK 311. Social Work and Oppressed Groups. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Open only to majors or minors in social welfare with junior status or by permission of program director or course instructor. Examines forces leading to individual prejudice and institutional oppression. Focuses on impact of oppression. Provides students with an understanding of diversity and a general knowledge of social work strategies to alleviate oppression and to empower the oppressed.

#### **SLWK 313. Person in Society I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH/INTL 103; BIOL 101, BIOL 151 or BIOL 152; PSYC 304; and SOCY 101. Open only to majors or minors in social welfare with junior status or by permission of program director or course instructor. First of a three-semester sequence on human behavior and the social environment. Uses theoretical concepts and research findings from the behavioral sciences as background for understanding and assessing the functioning of individuals and families in their social environment. Facilitates integration of theory and research with assessment skills associated with basic social work practice. Emphasizes the social systems approach for analyzing the impact of various social problems on individual and family dynamics.

#### **SLWK 330. Person in Society II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SLWK 313 with a minimum grade of C. Open only to majors or minors in social welfare with junior status or by permission of program director or course instructor. Second of three courses on human behavior in the social environment. Uses theoretical concepts from the behavioral sciences to understand the family and small groups as social institutions and social groups as context for human behavior over the life cycle. Designed to provide a theoretical foundation for practice with families and small groups.

#### **SLWK 332. Social Work Practice: Fundamentals. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SLWK 313 with a minimum grade of C. Corequisite: SLWK 393. Open only to social work majors with junior status. First of three semester practice sequence. Introduces students to basic concepts and skills of beginning-level professional generalist social work practice. Emphasizes application of concepts to the concurrent fieldwork experience.

#### **SLWK 380. Foundations of Social Work Research I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Open only to majors or minors in social welfare with junior status or by permission of program director or course instructor. First of two semester research sequence. Designed to provide an understanding and appreciation of a scientific, analytic approach to building knowledge for practice and for evaluating multilevel service delivery. Provides an overview of the research process, including problem formulation, sampling, design, measurement, data collection, data analysis and dissemination of findings. Presents ethical standards of scientific inquiry with special attention to research with vulnerable and oppressed populations.

#### **SLWK 381. Foundations of Social Work Research II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SLWK 380 with a minimum grade of C. Open only to social work majors or minors in social welfare with junior status or by permission of program director or course instructor. The content includes a review of basic statistical univariate and bivariate descriptive and inferential tools for analyzing, interpreting and presenting data for decision-making in generalist social work practice. It also introduces methods for analysis of quantitative and qualitative data and further develops critical-thinking skills in translating empirical research findings into generalist social work practice principles.

#### **SLWK 391. Topics in Social Work. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. An in-depth study of a selected topic relevant for professional social work practice. See the Schedule of Classes for the specific topic to be offered each semester.

#### **SLWK 393. Junior Field Instruction. 3 Hours.**

Semester course; 3 credits. Prerequisite: SLWK 313 with a minimum grade of C. Corequisite: SLWK 332. Open only to majors with junior status. Fourteen hours per week (spring semester) or 20 hours per week (summer session) in a community agency under the supervision of an agency-based field instructor. Intended to facilitate student's understanding of agency structure and community context, ability to engage in professional relationships, to assess strengths, define problems, set goals and utilize beginning-level practice skills with individuals, families, groups, organizations and communities. Promotes identification as a professional social worker.

#### **SLWK 422. Social Welfare Legislation and Services. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: completion of SLWK 311, 313, 330, 332, 380, 381 and 393, each with a minimum grade of C. Open only to majors or minors in social welfare with junior status or by permission of program director or course instructor. Analyzes social welfare policy as related to social values, social problems and social structures. Examines frameworks for policy analysis and for evaluation of programmatic outcomes of policy, with application to contemporary social service and income maintenance policies and delivery systems. Considers the economic, political and ideological factors and processes that affect social welfare legislation, financing and implementation.

**SLWK 431. Person in Society III. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SLWK 313 with a minimum grade of C. Open only to majors or minors in social welfare with junior status or by permission of program director or course instructor. Third of three courses on human behavior in the social environment. Builds on the theoretical concepts from the behavioral sciences discussed in SLWK 230 and 313. Focus on understanding organizations and how their purposes, auspices, structure, processes and environment affect the delivery of social services to diverse groups. The community context of social services, including that of the consumer, is emphasized from an open systems theoretical perspective. Students will be expected to integrate course content with their field experience or other agency with which they are familiar. Required of all undergraduate social work majors.

**SLWK 441. Social Work Practice I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: SLWK 332, 381 and 393, each with a minimum grade of C. Open only to majors with senior standing. Second of a three-semester practice sequence. Review of interviewing and problem-solving for generalist social work practice with diverse populations. Emphasis on agency structure and function, skills of engagement and problem definition, assessment, planning for intervention, and evaluation. Use of material from concurrent fieldwork practice to facilitate integration of learning.

**SLWK 442. Social Work Practice II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: SLWK 441 and SLWK 494, each with a minimum grade of C. Open only to majors with senior standing. Third of a three-semester practice sequence. Emphasizes planning and implementing change with diverse populations, professional ethics, professional development, termination and evaluation of generalist social work practice. Use of case material from concurrent fieldwork practice to facilitate integration of learning.

**SLWK 492. Independent Study. 1-3 Hours.**

Semester course; 1, 2 or 3 lecture hours. 1, 2 or 3 credits. Prerequisites: junior or senior standing, and permission of instructor. Under supervision of a faculty adviser, whose consent is required to register, study of a topic of concern to the student. Each student must present his or her findings in writing or pass an oral examination.

**SLWK 494. Senior Field Instruction I. 3 Hours.**

Semester course. 3 credits. Prerequisite: completion of SLWK 332, 381 and 393, each with a minimum grade of C. Corequisite: SLWK 441. Open only to majors with senior status. Fourteen hours per week in a community agency under the supervision of an agency-based field instructor. Intended to develop knowledge, values and social work practice skills appropriate to entry-level generalist practice in human service agencies.

**SLWK 495. Senior Field Instruction II. 3 Hours.**

Semester course. 3 credits. Prerequisite: completion of SLWK 494 with a minimum grade of C. Corequisite: SLWK 442. Open only to majors with senior status. Fourteen hours per week in a community agency under the supervision of an agency-based field instructor. Intended to develop knowledge, values and social work practice skills appropriate to entry-level generalist practice in human service agencies.

**SLWK 499. Senior Seminar. 1 Hour.**

Semester course. 1 credit. Corequisites: SLWK 442 and 495. Typically to be taken in the last semester of the student's senior year. This course serves as an academic culmination of the undergraduate social work program. The student will compile a portfolio of B.S.W. program academic materials, complete a professional self-assessment and resume and participate in the development of a comprehensive generalist intervention plan with regard to a specified social problem.

## VCU Life Sciences

### Bioinformatics (BNFO)

**BNFO 201. Computing Skills and Concepts for Bioinformatics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 151 or 200 with a minimum grade of C, or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An introduction to computation in bioinformatics, including basics of data representation, and computer organization, as well as programming in PERL or other appropriate scripting language. Bioinformatics applications in the literature will be discussed. Guest speakers will share bioinformatics career experiences and opportunities.

**BNFO 251. Phage Discovery I. 2 Hours.**

Semester course; 4 laboratory hours. 2 credits. Corequisite: BIOL 151 or 152. An exploratory laboratory where students will purify phage from soil, visualize phage using electron microscopy and isolate genomic material for nucleic acid sequencing. Registration by override only. Crosslisted as: LFSC 251.

**BNFO 252. Phage Discovery II. 2 Hours.**

Semester course; 4 laboratory hours. 2 credits. Corequisite: BIOL 151 or 152. An exploratory laboratory where students will learn about the genomes of viruses infecting bacteria. Students will be given the genome sequence of a novel virus, which will be the basis for a series of computer-based analyses to understand the biology of the virus and to compare it with other viruses that infect the same host. Registration by override only. Crosslisted as: LFSC 252.

**BNFO 292. Independent Study. 1-2 Hours.**

Semester course; variable hours. 1-2 credits. May be repeated for a maximum total of 6 credits. Prerequisite: permission of instructor. A course designed to provide an opportunity for independent readings of the bioinformatics literature under supervision of a staff member.

**BNFO 300. Molecular Biology Through Discovery. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. The course aims to expand students' "ignorance," a prerequisite for success in science, by confronting them with the interface between the known and the unknown, stressing the process by which the boundary is traversed. It will do so using as the raw material the study of molecular biology, an essential groundwork for bioinformatics.

**BNFO 301. Introduction to Bioinformatics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Introduction to the basic concepts, tools and possibilities of bioinformatics, the analysis of large bodies of biological information. The course stresses problem-solving and integrative projects, making extensive use of exercises in class that draw on bioinformatics resources on the Web and on local servers. Graded as pass/fail. Crosslisted as: BIOL 351.



**BNFO 380. Introduction to Mathematical Biology. 4 Hours.**

Semester course; 3 lecture and 2 laboratory hours. 4 credits.  
Prerequisites: MATH 200 and BIOL 151, or permission of instructor. An introduction to mathematical biology. Various mathematical modeling tools will be covered and implemented in a range of biological areas. Additionally, the collaborative research process will be presented and discussed. Crosslisted as: MATH 380/BIOL 380.

**BNFO 420. Applications in Bioinformatics. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits.  
Prerequisites: CMSC 245 or 255 and BNFO 301. Capstone course. Students will integrate biological, computational and quantitative skills to complete bioinformatics projects in a professional team-problem-solving context. Course includes explicit instruction in the conduct of research as well as a review of applicable strategies, methods and technologies. Written and oral presentation is emphasized, with systematic feedback and practice opportunities provided.

**BNFO 440. Computational Methods in Bioinformatics. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits.  
Prerequisites: CMSC 255 and 256; BNFO 301, or permission of instructor. An introduction to mathematical and computational methods in bioinformatics analysis. Topics include but are not limited to operating systems, interfaces, languages, SQL, search algorithms, string manipulation, gene sequencing, simulation and modeling, and pattern recognition. Students will be exposed to Maple, Matlab, SPSS, E-cell, BioPerl, Epigram and C as part of the requirements of this course.

**BNFO 491. Special Topics in Bioinformatics. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. Prerequisites: permission of instructor and adviser. An introductory, detailed study of a selected topic in bioinformatics unavailable as an existing course. Students will find specific topics and prerequisites for each special topics course listed in the Schedule of Classes. If multiple topics are offered, students may elect to take more than one. Adviser's approval is required for counting each special topics course toward meeting specific requirements of the B.S. program.

**BNFO 492. Independent Study. 1-4 Hours.**

Semester course; variable hours. A minimum of three hours of supervised activity per week per credit is required. 1-4 credits. May be repeated for a maximum total of 6 credits. Prerequisite: BIOL 218. Projects should include data collection and analysis, learning bioinformatics-related research techniques, and mastering experimental procedures, all under the direct supervision of a faculty member. A final report must be submitted at the completion of the project. Graded as pass/fail.

**BNFO 496. Undergraduate Teaching Assistantship in Bioinformatics. 1-2 Hours.**

Semester course; variable hours. 1-2 credits. May be repeated for a maximum total of 2 credits. Prerequisites: permission of instructor and a minimum grade of B in the course the student will TA. Student will work with course instructor to implement course objectives. Typical duties involve media preparation, answering questions, providing feedback on course assignments and peer mentoring. Provides exposure to the practice, possibilities, rewards and responsibilities of the act of teaching.

**BNFO 497. Research and Thesis. 1-4 Hours.**

Semester course; variable hours. A minimum of three hours of supervised activity per week per credit is required. 1-4 credits. May be repeated for a maximum total of 6 credits. Prerequisites: BIOL 218, junior or senior status. Projects should include data collection and analysis, learning bioinformatics-related research techniques, and mastering experimental procedures, all under the direct supervision of a faculty member. A written thesis of substantial quality is required at the completion of the research.

**Environmental Studies (ENVS)****ENVS 103. Environmental Science. 4 Hours.**

Hybrid semester course taught mostly online; 3 lecture and 2 laboratory hours. 4 credits. Online presentations, assignments, debates and exams require students to understand situations and ideas that involve scientific, social and economic concepts associated with Earth's environment. Laboratory exercises reinforce major course concepts. Integrates aspects of biology, chemistry, geology, physics and sociology. Topics include ecology, evolution, natural resources, air and water resources, energy and recycling, population biology, and sustainable global societies. Not applicable as a prerequisite for any biology course at the 200 level or above, nor for credit toward the B.S. in Biology. Crosslisted as: BIOL 103.

**ENVS 105. Physical Geology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. A descriptive approach to physical geology dealing with the history and structure of the earth, catastrophic events and geology as it relates to the contemporary environment. An optional laboratory, ENVZ 105, may be taken with this course.

**ENVS 201. Earth System Science. 3 Hours.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. An introduction to the processes of and linkages among the major systems that drive planet Earth. The biosphere, geosphere, hydrosphere, atmosphere and sociosphere are presented as dynamic and interdependent systems. Labs/discussion sections will include both computer modeling of integrated systems and lab activities/field trip(s) at the Rice Center for Environmental Life Sciences.

**ENVS 300. Sustainable Societies: James River Basin. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course explores the 25 most critical social, economic and environmental issues in the region in a global context. It examines how people are tackling the issues of sustainably and turning them into opportunities.

**ENVS 301. Introduction to Meteorology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introductory course designed to provide the student with an overview of the structures and processes that cause weather. These include atmospheric circulations and the weather patterns that we observe. Emphasis will be placed upon the tracking and display of weather phenomena, as well as their forecast movement and impact.

**ENVS 310. Introduction to Oceanography. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An introductory course designed to provide the student with an overview of the structures and processes of the world's oceans. These include the systems that impact the oceans: the hydrosphere, the atmosphere, the geosphere, the biosphere and the sociosphere. Emphasis will be placed upon hands-on techniques for understanding these systems, including online simulations and in-class activities.



**ENVS 311. Politics of the Environment. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An exploration of the current controversy about environmental politics and the issues and crises it centers on. Special attention will be given to the constitutional, political and geographical factors in the development of environmental policy and the organized effort to deal with governmental actions and inaction and its impact on policy outcomes. Crosslisted as: POLI 311.

**ENVS 314. Man and Environment. 3 Hours.**

Semester course. 3 lecture hours. 3 credits. A comparative study of the ecology and natural history of human populations, including the environments as determining factors in the evolution of human institutions and technology, resources management, and population crises; cultural traditions as mechanisms of population control; basic theory of population biology. Crosslisted as: INTL 314.

**ENVS 315. Energy and the Environment. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior or senior standing. Open to non-physics majors; not applicable to the physics major. A study of society's demand for energy, how it is currently being met, the environmental consequences thereof and some discussion of alternatives. Crosslisted as: PHYS 315.

**ENVS 330. Environmental Pollution. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: eight credits in biology. The study of pollution in the environment with emphasis on the procedures for detection and abatement. Crosslisted as: BIOL 332.

**ENVS 332. Environmental Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GEOG 204 or URSP 204. An interdisciplinary review of domestic and international environmental problems and their underlying causes, current management frameworks, alternative management approaches and strategies, and barriers to their implementation. Other topics include: environmental history and economics, population growth, natural resources use, biodiversity, pollution. Crosslisted as: URSP 332.

**ENVS 335. Environmental Geology. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENVS 105 or URSP 204. The relationship between humankind and the physical environment, Earth materials and processes, geological hazards, water, mineral and energy resources, land use and environmental health and law.

**ENVS 368. Nature Writing. 3 Hours.**

Semester course 3 lecture hours. 3 credits. Prerequisite: ENGL 201, 202, 203, 204, 205, 206, 211, 215, 236, 291 or 295. A study of the literary genre of nature writing in English. Crosslisted as: ENGL 368.

**ENVS 401. Meteorology and Climatology. 3 Hours.**

Semester course; 3 lecture hours. Prerequisite: PHYS 201 or PHYS 207. A basic, semiquantitative course in the elements of weather and climate, their driving forces and their spatial and temporal distribution and variability. Atmospheric motions and circulation, weather forecasting, human impact on weather and climate.

**ENVS 411. Oceanography. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, BIOL 152 and CHEM 102. A basic course in the physical, chemical and geological properties of oceans and ocean basins. Origin and character of ocean basins, properties of oceanic waters, oceanic circulation, land-sea interactions, marine environments and ecology.

**ENVS 490. Research Seminar in Environmental Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: senior standing and at least 12 hours of approved environmental studies course work. An interdisciplinary examination of problems and issues central to environmental studies. Environmental research of VCU faculty will be reviewed, and selected local environmental problems will be studied. Each student will complete a research project focusing on a specific environmental question.

**ENVS 491. Topics in Environmental Studies. 1-3 Hours.**

Semester course; variable hours. 1-3 credits per semester. May be repeated with different topics for a maximum of 6 credits. Prerequisites vary by topic. An in-depth study of a selected environmental topic. See the Schedule of Classes for specific topics to be offered each semester and prerequisites.

**ENVS 492. Independent Study. 1-3 Hours.**

Semester course; variable hours. Variable credit. Maximum of 3 credits per semester; maximum total of 6 credits for all topics courses. Prerequisite: junior or senior standing, and permission of instructor.

**ENVS 493. Environmental Studies Internship. 1-3 Hours.**

Semester course; variable hours. 1-3 credits per semester. Maximum total of 6 credits. Prerequisite: junior or senior standing, and permission of instructor. Graded as pass/fail.

**Environmental Studies Lab (ENVZ)****ENVZ 105. Physical Geology Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Pre- or corequisite: ENVS 105, an optional laboratory course consisting of experiments and activities related to ENVS 105.

**ENVZ 335. Environmental Geology Laboratory. 1 Hour.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: ENVS 335. Required for environmental science majors enrolled in ENVS 335; optional for other majors. Attendance on one Saturday morning field trip required. Laboratory exercises coordinated with ENVS 335 lectures.

**ENVZ 401. Meteorology and Climatology Laboratory. 1 Hour.**

Semester course; 3 laboratory hours. 1 credit. Pre- or corequisite: ENVS 401. A series of laboratory and field experiments designed to quantify the elements of weather and climate and to interpret their local temporal and spatial variations.

**Life Sciences (LFSC)****LFSC 251. Phage Discovery I. 2 Hours.**

Semester course; 4 laboratory hours. 2 credits. Corequisite: BIOL 151 or 152. An exploratory laboratory where students will purify phage from soil, visualize phage using electron microscopy and isolate genomic material for nucleic acid sequencing. Registration by override only. Crosslisted as: BNFO 251.

**LFSC 252. Phage Discovery II. 2 Hours.**

Semester course; 4 laboratory hours. 2 credits. Corequisite: BIOL 151 or 152. An exploratory laboratory where students will learn about the genomes of viruses infecting bacteria. Students will be given the genome sequence of a novel virus, which will be the basis for a series of computer-based analyses to understand the biology of the virus and to compare it with other viruses that infect the same host. Registration by override only. Crosslisted as: BNFO 252.

**LFSC 301. Integrative Life Sciences Research. 3 Hours.**

Semester course; 2 lecture and 1 recitation hours. 3 credits. Pre- or corequisite: UNIV 200 or HONR 200. Students will leave this course knowing enough about science and the process of science to feel confident in critically evaluating scientific information and/or embarking on their own process of discovery with a faculty mentor. They will gain an appreciation of the interdisciplinary and complex nature of life sciences and will hone their critical thinking about how science interacts with and informs society.

**LFSC 307. Community Solutions: Multiple Perspectives. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PYSC 101. Explores possibilities for addressing social concerns of the Richmond community by understanding the complex nature of social issues as essential to their successful amelioration via perspectives of life and social sciences. Toward this end, expertise from the social sciences, the life sciences and the community are integrated. Includes a service-learning experience (a 20-hour volunteer requirement). Crosslisted as: PSYC 307.

**LFSC 401. Faith and Life Sciences. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 200 or HONR 200. Open to students of any school or program. Explores the complex relationships between faith traditions and the life sciences. Topics include epistemology, impact of life sciences on ideas of fate and responsibility, limits of science and technology, and scientific and religious perspectives on human origins, consciousness, aggression, forgiveness, health, illness and death. Crosslisted as: RELS 401.

## University College

### University College (UNIV)

**UNIV 101. Introduction to the University. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Designed to orient new students to the traditions, purposes and expectations of a university education. Students will assess their expectations and evaluate their academic strengths and goals. Through lectures, guest speakers and individual projects, students will learn of VCU resources designed to help them solve problems and to achieve a rewarding and successful academic program. This course is required for students admitted conditionally to VCU; it is recommended for all first-year students.

**UNIV 102. MINDSET for Academic Success. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Restricted to first-year students with 24 or fewer earned credit hours who want to improve college success skills. The student, with assistance from his or her adviser, will create an individualized program of study to improve academic performance.

**UNIV 103. Education and Career Planning. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for a total of 3 credits. An education- and career-planning course focusing on the process of researching and selecting a major. Through course work, research, guest speakers and informational interviewing, students will discover various educational and career options. Topics will include interest, abilities and work-values assessments, decision-making models and career development theories. One- and two-credit versions of the course are offered with correspondingly reduced meeting schedules.

**UNIV 111. Focused Inquiry I. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Utilizes contemporary themes to give students opportunities and practice in writing, critical thinking, oral presentation, collaborative learning, information retrieval and evaluation, and social and civic responsibilities. Incorporates common reading materials and course activities across all sections.

**UNIV 112. Focused Inquiry II. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 111 or equivalent. Builds on skills introduced in UNIV 111 by providing practice in expository essays, argument and contextual analysis. Focuses on practice in writing in a variety of genres, framing writing according to both purpose and audience and identifying academically valid sources. This course is writing intensive.

**UNIV 151. Focused Learning Workshop in BIOL 151. 1-2 Hours.**

Semester course; 3 workshop hours. 1-2 credits. Corequisite: BIOL 151. Designed to assist students in improving their understanding of complex biology material. Will supplement the BIOL 151 class lecture. Course assists students with integrating how-to-learn with what-to-learn for BIOL 151. Includes both discussion and study-skills strategies. Students required to complete homework assignments and to demonstrate mastery of specific study techniques. In addition to the semester-long 2-credit offering, a 1-credit course is opened to students after the first BIOL 151 exam.

**UNIV 152. Focused Learning Workshop in BIOL 152. 1-2 Hours.**

Semester course; 3 workshop hours. 1-2 credits. Corequisite: BIOL 152. Designed to assist students in improving their understanding of complex biology material. Will supplement the BIOL 152 class lecture. Course assists students with integrating how-to-learn with what-to-learn for BIOL 152. Includes both discussion and study-skills strategies. Students required to complete homework assignments and to demonstrate mastery of specific study techniques. In addition to the semester-long 2-credit offering, a 1-credit course is opened to students after the first BIOL 152 exam.

**UNIV 200. Inquiry and the Craft of Argument. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: UNIV 112 with a minimum grade of C. A research and writing process course that emphasizes critical analysis, elements of argument, inquiry-based research skills, writing conventions of academic argument and the presentation of argument and research into new mediums.

**UNIV 211. Food for Thought. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. An interdisciplinary exploration of food using analytical lenses from sociology, anthropology, philosophy, art, literature, history, political science, psychology, economics and religious studies.

**UNIV 213. The Truth About Lying. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Students will engage in collaborative inquiry to critically consider their own beliefs, common notions of ethical behaviors and practical standards through exploring the nature and function of lying. Students will work together to build a foundation of knowledge on the subject of lying and investigate a broad range of disciplines through the lie to question, abandon and embrace value judgments imperative to their daily lives.

**UNIV 217. Finding Your Voice in Contemporary Society. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: UNIV 111 and 112 or both ENGL 295 and HONR 200. Focuses on strategies for expression in contemporary society. This course examines the messages that are conveyed in our society and how people decode and understand those messages. Course will focus on popular culture themes and practical problem-solving.

**UNIV 222. Pseudoscience. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Course critically evaluates controversial fringes of scientific inquiry, such as those related to paranormal investigations and quack medicine. By engaging with topics chosen from astronomy, anthropology, biology, mathematics, medicine, philosophy and psychology, students will apply critical thinking skills to a variety of strange and provocative ideas.

**UNIV 250. Undergraduate Teaching Assistant Program. 1 Hour.**

Semester course. 1 credit. May be repeated for up to 2 credits. Prerequisites: successful completion of UNIV 111 and 112 with minimum grades of B. Utilizes classroom practice to further the core skills developed in UNIV 111 and 112 (writing, critical thinking, oral presentation, collaborative learning, information retrieval and evaluation, and social and civic responsibilities) as well as exposing students to the practice, possibilities, rewards and responsibilities of the act of teaching.

**UNIV 251. Undergraduate Teaching Assistant Program. 1 Hour.**

Semester course; 1 credit. May be repeated for up to 2 credits. Prerequisites: instructor permission; successful completion of UNIV 200 or HONR 200 with minimum grade of B. Utilizes classroom practice to further the core skills developed in UNIV 200 (including writing, critical thinking, collaborative learning, information retrieval and evaluation) as well as exposing students to the practice, possibilities, rewards and responsibilities of the act of teaching.

**UNIV 270. Introduction to Leadership Studies. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Open only to students participating in the Emerging Leaders Scholarship Program or enrolled in VCU LEAD. Introductory study of leadership theory, group dynamics and human relationships used in volunteer organizations and leisure delivery systems. Foundations of leadership/follower behavior, advanced facilitation techniques and techniques of decision-making, problem-solving, conflict management and program evaluation will be examined.

**UNIV 291. University Special Topics. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. May be repeated with different content. Specialized topics in subject and competency areas related to the core curriculum program not provided by an existing course or program. May be multidisciplinary. Graded as pass/fail or normal letter grading at the option of the instructor.

**UNIV 299. What's the Big Idea?. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Each section in this interdisciplinary course will focus on a particular "big question" that has intrigued thinkers throughout time and across cultures. As students move from personal to global — and from theoretical to practical — investigations of the question, they will come to understand inquiry as a complex cycle of questioning, gathering, examining, interpreting, comparing, analyzing and evaluating, with important application to decision-making and problem-solving in the "real world."

**UNIV 350. Peer Leadership Program. 3 Hours.**

Semester course; 3 credits. May be repeated for up to 6 credits. Prerequisite: 2 credits of UNIV 250 with a minimum grade of B. Building on skills introduced in UNIV 250, this course gives students hands-on experience in the practice of creating and maintaining student engagement.

**UNIV 391. University Special Topics. 1-4 Hours.**

Semester course; variable hours. 1-4 credits. May be repeated with different content. Specialized topics in subject and competency areas related to the core curriculum program not provided by an existing course or program. May be multidisciplinary. Graded as pass/fail or normal letter grading at the option of the instructor.

**UNIV 499. BIS Senior Capstone. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: senior standing and 18 hours in focus area. Students will synthesize and evaluate the theoretical, methodological and substantive issues discovered during course work in the focus area.

## da Vinci Center for Innovation

### Innovation in Product Design and Development (INNO)

**INNO 200. Introduction to Innovation and Venture Creation. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. A speaker series focused on the discussion of pertinent topics related to product innovation and venture creation. Students will be exposed to numerous topics through guest speakers supplemented by readings and class discussion. Topics include conceptualization, patents, capitalization, venture formation, commercialization, market assessment, project management and product life cycle management.

**INNO 221. Introduction to Arts and Design Principles. 3 Hours.**

Semester course; 1 lecture and 2 studio hours. 3 credits. Restricted to non-arts students enrolled in the Certificate in Product Innovation program. Introduces arts and design principles to students from non-arts disciplines.

**INNO 223. Introduction to Business Principles. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Open only to non-business majors in the Certificate in Product Innovation program. Introduces business fundamentals to students from non-business disciplines. Particular focus will be concepts and issues in contemporary business.

**INNO 225. Introduction to Engineering and Technology Principles. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Open only to non-engineering majors in Certificate in Product Innovation program. Introduces engineering and technology fundamentals to students from non-engineering disciplines. Particular focus is the engineering problem-solving process as applied to open-ended problems. Students will be introduced to the different types of engineering, examine engineering and technology issues and apply the engineering problem-solving process.

**INNO 351. Creativity for Innovation and Entrepreneurship. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Students are introduced to the role of creativity in innovation and entrepreneurship. A multidisciplinary orientation and approach are emphasized.

**INNO 352. Making Innovation Happen. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Students are introduced to the role of innovation in today's society. A multidisciplinary orientation and approach are emphasized.

**INNO 353. Making Entrepreneurship Happen. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Students are introduced to the role of entrepreneurship in today's society. A multidisciplinary orientation and approach are emphasized.

**INNO 450. Realizing Innovation and Entrepreneurship. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Students will learn how innovation and entrepreneurship are manifested in today's society. A multidisciplinary orientation and approach are emphasized.

**INNO 460. Product Innovation: da Vinci Project. 3 Hours.**

Semester course; 3 credits. Prerequisite: permission of instructor. Students from the School of the Arts, School of Engineering and School of Business work together on a semester-long product innovation project with a corporate sponsor under faculty supervision. Topics and activities may include project management, team building, concept generation and testing, market analysis, visualization, and prototyping.

**INNO 491. Special Topics in Product Innovation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Study of current and emerging topics in the field of product innovation. Topics may vary from semester to semester.

**INNO 492. Independent Study in Product Innovation. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. Students pursuing a da Vinci Center certificate may receive a maximum total of 3 credits for all INNO 492 courses. Prerequisites: junior standing and permission of adviser and da Vinci Center director prior to course registration. Intensive study or research under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

## Venture Creation (VNTR)

**VNTR 300. Venture Creation Skills. 3 Hours.**

Semester course; 3 lecture hour. 3 credits. Students are introduced to and apply various skills important for real venture creation. A multidisciplinary orientation and approach are emphasized throughout the course.

**VNTR 460. Venture Creation Project. 3 Hours.**

Semester course; 3 lecture hour. 3 credits. Students will work in cross-disciplinary teams on a semester-long venture creation project. Topics and activities may include business model generation, customer discovery, customer validation, financial analysis and agile development.

**VNTR 491. Special Topics in Venture Creation. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Study of current and emerging topics in the field of venture creation. Topics may vary from semester to semester.

**VNTR 492. Independent Study in Product Innovation. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. Students pursuing a da Vinci Center certificate may receive a maximum total of 3 credits for all VNTR 492 courses. Prerequisites: junior standing and permission of adviser and da Vinci Center director prior to course registration. Intensive study or research under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

## Academic Affairs

### Community Studies (CMST)

**CMST 210. Health Careers Exploration. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. Open only to high school students enrolled in programs partnering with VCU's Health Sciences Academy. High school students will learn college-success skills, how to make informed decisions about the health careers they wish to pursue and plan college-level courses and extracurricular activities to achieve their career goals. Material is presented through lectures from health care workers in various specialties, hands-on activities and exposure to college mentors.

**CMST 300. The Foundations of Community Engagement. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Course content includes theories of citizenship, social movements, civic leadership, social justice, civil discourse, service and social capital. The survey course is foundational for subsequent seminars.

**CMST 301. Neighborhood Research Seminar. 1 Hour.**

Semester course; 1 credit. Prerequisite: CMST 300. Enrollment restricted to VCU ASPIRE students. Community engagement knowledge and skills are applied to studying the character, history and social issues that impact Richmond neighborhoods through group and individual projects.

**CMST 310. Orientation to Service-learning. 1.5 Hour.**

Seven-week course; content delivered online. 1.5 credits. Prerequisite: permission of instructor. Interactive, online orientation training designed to introduce students to the historical and theoretical foundations of service-learning. Students will also become familiar with indicators of high-quality community engagement practices. Course content is available through Blackboard, and the class will not meet face-to-face. Students are expected to complete assignments and activities for course modules by the due dates specified on Blackboard.

**CMST 391. Topics in Community Studies. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated for a maximum of six credits with different topics. Open only to students enrolled in the ASPIRE living-learning program. An in-depth study of a selected topic in community studies. See the Schedule of Classes for specific topics to be offered each semester.

**CMST 400. The Community Engagement Seminar. 1 Hour.**

Semester course; 1 credit. Prerequisite: CMST 301. Discipline-based knowledge and skills are applied to assessed community needs. A service-learning component of 25 hours is included.

**CMST 401. The Capstone Community Engagement Seminar. 1 Hour.**

Semester course; 1 credit. Prerequisite: CMST 400. Community-identified needs are addressed by discipline-specific interventions that result in documented social change. A service-learning component of 25 hours is included.

**CMST 410. Service-learning Teaching Assistant Supervision. 1.5 Hour.**

Semester course; 2.5 laboratory hours. 1.5 credits. Enrollment requires permission of instructor. Corequisite: CMST 310. Provides undergraduate students with support and instruction during their first semester of service as teaching assistants to VCU service-learning courses. Requirements include a minimum of five hours per week of teaching assistance activities within a designated service-learning course, attendance at monthly group supervision meetings and participation in service-learning group activities. Supervision meetings are designed to help students build important community leadership skills such as team facilitation, ethical problem-solving and diversity awareness/appreciation.

**CMST 411. Advanced Service-learning Teaching Assistant Supervision. 1 Hour.**

Semester course; 2 laboratory hours; 1 credit. Prerequisites: CMST 310 and CMST 410. This course emphasizes effective techniques and strategies for advanced service-learning teaching assistants to increase their impact on student development and community outreach in service-learning courses. Students serve as peer mentors and facilitators for SLTAs in their first semester of service in addition to providing invaluable technical support to their instructors. The course will provide advanced SLTAs with individualized leadership assessments designed to enhance their leadership skills and emphasize the role of student leaders in successful service-learning courses.

**CMST 491. Special Topics in Community Studies. 1-3 Hours.**

Semester course; 1-3 variable hours. 1-3 credits. Prerequisite: permission of instructor. An in-depth study of a selected topic related to community studies. See the Schedule of Classes for specific topics to be offered each semester. If several topics of different content are offered, students may elect to take more than one.

**CMST 492. Independent Study in Community Studies. 1-3 Hours.**

Semester course; 1-3 variable hours. 1-3 credits. Prerequisite: permission of instructor. Intensive study or research under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.



**CMST 493. The Community Engagement Internship. 1-3 Hours.**

Semester course; 1-3 variable hours. 1-3 credits. May be repeated a maximum of two times with program approval. Prerequisite: CMST 300. Civic leadership and responsibility are emphasized in workplace internships established with community partners. A service-learning component of 45 hours per credit hour is included.

**Cooperative Education (COOP)****COOP 298. Cooperative Education Experience. 0 Hours.**

Semester course; the student works a maximum of 20 hours per week, completes all off-campus/on-campus assignments. No credit. Open to students who have been placed in an approved co-op position with an agency, business, industry or institution.

**COOP 398. Cooperative Education Experience. 0 Hours.**

Semester course; the student works a maximum of 40 hours per week, completes all off-campus/on-campus assignments. No credit. Open to students who have been placed in an approved co-op position with an agency, business, industry or institution.

**Global Education (GLED)****GLED 101. Introduction to VCU Globe. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Open only to students enrolled in the VCU Globe program. An introduction to the organizational components of VCU Globe and to the intellectual and conceptual foundations of global education. Students will be introduced to the academic, service and professional expectations of the VCU Globe program. This seminar will prepare students for the engaged activities that form the core of the VCU Globe's curriculum. Graded as pass/fail.

**GLED 201. Global Education Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: GLED 101. Open only to students enrolled in the VCU Globe program. A seminar covering core concepts in global education, including global education as a learning paradigm; the role of the "culture broker" in professional fields; cultural, national, linguistic and personal "community borders"; global paths of migration; and the emerging idea of world citizenship. Students will explore the skills they are expected to learn and practice in the VCU Globe curriculum and the programs in which they will practice those skills. This seminar will prepare students for the engaged activities that form the core of the VCU Globe's curriculum. Includes community service activities.

**GLED 202. Global Engagement Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: GLED 201. Open only to students enrolled in the VCU Globe program. An introduction to the central concepts of global engagement, including defining culture and community in the contemporary world, global communication styles and skills, identity's relationship to migration, cultures within cultures, and sustainable asset-based development. Includes community service activities.

**GLED 301. Planning for Global Leadership Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: GLED 202. Open only to students enrolled in the VCU Globe program. An introduction to the core concepts in global leadership, including global trends in community leadership, citizen-leadership, governmental and nongovernmental organizations, transcultural organizations, and inter- and intraorganizational sustainability. Working in teams, students will complete a proposal for an applied global community service project. Includes community service activities.

**GLED 302. Preparing for Global Leadership Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: GLED 301. Open only to students enrolled in the VCU Globe program. Working in teams, students will refine and present to multiple audiences proposals for applied global community-service projects. Proposals will be reviewed by a faculty board and a small number will be selected for support the following year. Includes community service activities.

**GLED 391. Topics in Global Education. 1-3 Hours.**

Semester course; 1-3 lecture hours. 1-3 credits. May be repeated with different topics for a maximum of nine credits, with a limit of six credits in a single semester. Open only to students enrolled in the Global Education Living-Learning Community. An in-depth study of a selected topic in global education. See the Schedule of Classes for specific topics to be offered each semester.

**GLED 401. Global Education Senior Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: GLED 302. Open only to seniors enrolled in the VCU Globe program. Students will focus on professional self-assessment, completion of curricular and co-curricular portfolios, career and graduate school preparation, and articulating links between global education and their professional plans.

**GLED 493. Global Leadership Practicum. 1-3 Hours.**

Semester course; variable hours. 1-3 credits. May be repeated for a maximum total of 6 credits, with a limit of 3 credits in a single semester. Prerequisites: GLED 302 and permission of instructor. Open only to seniors enrolled in the VCU Globe program. Working in teams, students will implement selected proposals. Includes 30 hours of service work per credit.

**Honors (HONR)****HONR 150. Flourishing. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Restricted to freshmen in The Honors College. Transitioning from high school to college is a major developmental task. The challenges include independence from adult supervision, new friendships, exposure to a unique culture of academic pressure, relative freedom with access to leisure time activities that include both positive and negative elements. Anxiety/depression, problems with substance use and mental illness often make their presence known in this period. It can be a time of high stress and tension but also a time for unprecedented opportunity to discover strength and resilience that sets students on a positive trajectory on the stage of life. Both professors and students have discovered that self-doubt, tension and stress not only impede knowledge acquisition but also the capacity to flourish, i.e. to actualize one's innate capacity for resilience and growth. This course examines the state of college student mental health and wellness on a personal and systems level. It provides an opportunity for students to re-evaluate their beliefs, values and assumptions, and to do so in the context of learning about the science behind health and wellness. Key findings from the fields of positive psychology and the study of mental illness will inform students' understanding of the biopsychosocial underpinnings of well-being.



**HONR 160. Introduction to Community Engagement. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Restricted to freshmen in The Honors College. Contemporary communities are diverse and interconnected. To impact positive social changes, leaders in these communities must understand critical theories of community engagement. This course surveys critical theories and models of community engagement, including but not limited to theories of citizenship, social movements, civic leadership, social justice, civil discourse and social capital. Students will use an interdisciplinary lens to analyze principles and practices of community engagement. The course also serves as an introduction to community engagement within the VCU Honors College.

**HONR 190. Freshman Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Restricted to freshmen in The Honors College. This course develops a learning paradigm for students appropriate to university education. Students are expected to gain a willingness to take intellectual risks, to engage in their own learning actively and to take responsibility for their own education. A thorough orientation to the library and other university resources is included. The students will hone critical-thinking skills while examining selected topics from a perspective that emphasizes critical interpretation rather than mastery of information. Students will engage in collaborative projects on specified topics. Attendance at certain Honors College events is required.

**HONR 198. Freshman Honors. 1-4 Hours.**

Semester course; 3 lecture hours. Variable credit. Maximum total of 8 credits. May be repeated once under different topic. Prerequisite: permission of the dean of The Honors College. An interdisciplinary course that will provide an intensive study of selected topics.

**HONR 200. Rhetoric. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. In-depth study of principles of rhetoric and argumentation in both written and oral formats. Emphasis is on research-based expository writing and debate, with skills development in technological applications for information retrieval. Students may not receive credit for both HONR 200 and UNIV 200.

**HONR 250. Expository Writing. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. In-depth study of principles of expository writing focusing on purpose and audience. Particular emphasis on critically engaging with texts and writing about original ideas informed by the thinking of others. Develops a number of writing strategies and skills including narration, description and figuration as well as the art of persuasion.

**HONR 298. Sophomore Honors. 1-4 Hours.**

Semester course; 3 lecture hours. Variable credit. Maximum total of 8 credits. May be repeated once under different topic. Prerequisite: permission of the dean of The Honors College. Appropriate prerequisite or corequisites may be demanded. An interdisciplinary course that will provide an intensive study of selected topics.

**HONR 300. Qatar Honors Experiential Learning Project. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: junior or senior standing and approval of Honors College dean. Restricted to honors students. Experiential learning is a project-based and student-led experience utilizing hands-on learning, academic research and personal reflection to increase knowledge, develop skills, clarify values and make worthwhile contributions to communities, organizations or groups. This course provides honors students with opportunities to collaborate with local, regional and/or international communities and organizations to engage in meaningful projects and initiatives that enhance academic enrichment, foster personal growth and practice social responsibility.

**HONR 398. Honors Topics. 1-4 Hours.**

Semester course; 3 lecture hours. Variable credit. May be repeated with different topics. Prerequisite: permission of the dean of The Honors College. Appropriate prerequisite or corequisites may be demanded. An in-depth study of selected topics. May be cross listed with departmental courses. See the Schedule of Classes for specific topics to be offered each semester.

**HONR 399. Honors Module. 1.5 Hour.**

Five-week course; 3 lecture hours. 1.5 credits per module. Prerequisite: permission of the dean of The Honors College. Intensive studies of topics from a wide spectrum of disciplines are undertaken. Each module is a self-contained unit. See the Schedule of Classes for specific topics to be offered each semester.

**HONR 492. Honors Independent Study. 0.5-4 Hours.**

Semester course; variable hours. Variable credits. Maximum of 4 credits per semester. Maximum total of 9 credits over all semesters. Prerequisites: junior or senior standing, and approval of Honors College dean and instructor/tutor. Intensive study under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

**LEAD (LDRS)****LDRS 200. Profiles in Leadership. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Restricted to students in the Emerging Leaders Program or an approved program-in-residence. This seminar will introduce students to leadership by exploring a variety of historical and contemporary leaders and discussing the impact of their leadership on the world. Students will also discuss the ways in which their own leadership development can contribute to their success both in the classroom and in their communities.

**LDRS 201. Leadership Identity. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Course restricted to students enrolled in VCU LEAD. This seminar will expose students to foundational principles of the leadership phenomenon, explore the role of the leader in the leadership process and promote self-understanding and leadership efficacy. Students will learn the ways in which leadership identity is developed and will discover and reflect upon their own leadership identity.

**LDRS 202. Leadership Context. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: LDRS 201. This seminar will provide an overview of the different contexts in which leadership occurs. Students will examine leadership pathways that are available through the VCU LEAD program and choose a pathway for in-depth exploration.

**LDRS 301. Leadership Engagement. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisites: LDRS 202 and UNIV 270. This seminar will focus intensely on the student's experience in the leadership practicum as both a leader and a follower. Students will analyze the ways in which leadership theory and principles learned in the classroom applied to their experience and how their preparation and self-efficacy as a leader contributed to their success.

**LDRS 302. Culminating Leadership Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: LDRS 301. This culminating seminar integrates all aspects of the VCU LEAD program. Students will examine the different contexts in which they experienced leadership from the perspective of both leader and follower. The student will clearly illustrate their expertise, capability and self-efficacy as a leader through a folio of their experience.

**LDRS 491. Special Topics in Leadership. 1-3 Hours.**

Semester course; 1-3 variable hours. 1-3 credits. Enrollment requires admission to VCU LEAD and permission of instructor. An in-depth study of a selected topic related to leadership. See the Schedule of Classes for specific topics to be offered each semester. If several topics of different content are offered, students may elect to take more than one.

**LDRS 492. Independent Study in Leadership. 1-3 Hours.**

Semester course; 1-3 variable hours. 1-3 credits. Enrollment requires admission to VCU LEAD and permission of instructor. Intensive study supervision of a faculty member in an area not covered in-depth or contained in other VCU LEAD (LDRS) courses and/or independent investigation and research of leadership problems through readings, data collection and analysis. Written interim and final reports required.

# INDEX

## A

About VCU .....	10	Administration .....	479
Academic advising .....	35	Administration .....	481
Academic policies .....	361	Administration .....	487
Academic regulations and general degree requirements .....	49	Admission guidelines .....	13
Accelerated Bachelor of Arts (B.A.) in Political Science and Master of Public Administration (M.P.A.) .....	159	Admission guidelines for transfer students .....	16
Accelerated Bachelor of Science (B.S.) and Master of Environmental Studies (M. Envs.) .....	489	Admission notification .....	15
Accelerated Bachelor of Science (B.S.) and Master of Science (M.S.) in Computer Science .....	438	Admission procedures .....	14
Accelerated Bachelor of Science (B.S.) and Master of Science (M.S.) in Sociology .....	180	Admission to the university .....	13
Accelerated Bachelor of Science (B.S.) in Physics and Master of Science (M.S.) in Physics and Applied Physics .....	144	Admissions to the Honors College .....	520
Accelerated bachelor's-to-master's programs .....	66	Advanced Media Production Technology, Certificate in (Post-baccalaureate undergraduate certificate) .....	273
Accounting, Bachelor of Science (B.S.) .....	364	Advising after the first year .....	48
Accounting, Certificate in (Post-baccalaureate undergraduate certificate) .....	367	Advising program .....	49
Accreditation .....	10	African American Studies, Bachelor of Arts (B.A.) .....	71
Accreditation .....	68	African American Studies, Bachelor of Arts (B.A.) with a concentration in artistic, historical and literary perspectives .....	75
Accreditation .....	249	African American Studies, Bachelor of Arts (B.A.) with a concentration in political, religious and societal perspectives .....	77
Accreditation .....	271	African American Studies, Bachelor of Arts (B.A.) with a concentration in social and behavioral perspectives .....	79
Accreditation .....	356	African American studies, minor in .....	81
Accreditation .....	417	African studies, minor in .....	242
Accreditation .....	422	American studies, minor in .....	98
Accreditation .....	426	Anthropology, Bachelor of Science (B.S.) .....	213
Accreditation .....	452	Anthropology, minor in .....	243
Accreditation .....	470	Appeal to waive an academic regulation, Academic Regulations Appeals Committee .....	63
Accreditation .....	472	Arabic and Middle Eastern studies, minor in .....	243
Accreditation .....	481	Art Foundation Program .....	274
Additional sources of academic credit .....	18	Art History, Bachelor of Arts (B.A.) with a concentration in architectural history .....	280
Administration .....	10	Art History, Bachelor of Arts (B.A.) with a concentration in art historical .....	282
Administration .....	68	Art History, Bachelor of Arts (B.A.) with a concentration in art historical .....	346
Administration .....	249	Art history, minor in .....	284
Administration .....	271	Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in art education .....	276
Administration .....	356	Asian and Chinese studies, minor in .....	244
Administration .....	417	Associations and student interest groups .....	482
Administration .....	422	Attendance regulations .....	50
Administration .....	426	Attendance regulations .....	250
Administration .....	452	Awarding degrees posthumously .....	63
Administration .....	470	<b>B</b>	
Administration .....	472	B.S.W. Program .....	482
		Bachelor of Interdisciplinary Studies Program .....	181
		Bioinformatics, accelerated bachelor's to master's .....	491

Bioinformatics, Bachelor of Science (B.S.) with a concentration in biological/genomic .....	491	Cinema, Bachelor of Arts (B.A.) .....	274
Bioinformatics, Bachelor of Science (B.S.) with a concentration in computational .....	493	Classification of students .....	50
Bioinformatics, Bachelor of Science (B.S.) with a concentration in quantitative/statistical .....	496	Clinical Laboratory Sciences, Bachelor of Science (B.S.) .....	252
Biology, Bachelor of Science (B.S.) .....	81	Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology .....	254
Biology, minor in .....	84	Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology (degree completion) .....	257
Biomedical Engineering, Bachelor of Science (B.S.) .....	429	Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in nuclear medicine technology (second modality) .....	258
Board of Visitors .....	11	Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy .....	260
British studies, minor in .....	99	Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy (degree completion) .....	262
Business honors .....	360	Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiation therapy (second modality) .....	263
Business, Bachelor of Science (B.S.) with a concentration in finance ...	371	Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiography .....	265
Business, Bachelor of Science (B.S.) with a concentration in human resource management .....	390	Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiography (degree completion) .....	267
Business, Bachelor of Science (B.S.) with a concentration in management/business administration .....	393	Clinical Radiation Sciences, Bachelor of Science (B.S.) with a concentration in radiologist assistant (second modality) .....	268
Business, Bachelor of Science (B.S.) with a concentration in management/entrepreneurship .....	395	College of Humanities and Sciences .....	68
Business, Bachelor of Science (B.S.) with a concentration in management/international management .....	398	Commencement participation policy .....	63
Business, Bachelor of Science (B.S.) with a concentration in risk management and insurance/corporate .....	373	Communication Arts, Bachelor of Fine Arts (B.F.A.) .....	284
Business, Bachelor of Science (B.S.) with a concentration in risk management and insurance/financial planning .....	376	Communication Arts, Bachelor of Fine Arts (B.F.A.) with a concentration in scientific and preparatory medical illustration .....	286
Business, Bachelor of Science (B.S.) with a concentration in supply chain management and analytics .....	414	Computer Engineering, Bachelor of Science (B.S.) .....	440
<b>C</b>		Computer engineering, minor in .....	445
Categories of student enrollment .....	50	Computer Science, Bachelor of Science (B.S.) .....	436
Center for Clinical and Translational Research .....	507	Computer Science, Certificate in (Post-baccalaureate undergraduate certificate) .....	439
Center for Environmental Studies .....	487	Computer science, minor in .....	439
Center for the Study of Biological Complexity .....	490	Consumer information .....	12
Chemical and Life Science Engineering, Bachelor of Science (B.S.) with a concentration in chemical engineering .....	432	Consumer information .....	64
Chemical and Life Science Engineering, Bachelor of Science (B.S.) with a concentration in life science engineering .....	434	Contacts .....	64
Chemical and life science engineering, minor in .....	436	Continuance in academic programs .....	61
Chemistry, Bachelor of Science (B.S.) with a concentration in biochemistry .....	85	Continuing education .....	482
Chemistry, Bachelor of Science (B.S.) with a concentration in chemical modeling .....	87	Cooperative education program .....	427
Chemistry, Bachelor of Science (B.S.) with a concentration in chemical science .....	89	Core curriculum .....	64
Chemistry, Bachelor of Science (B.S.) with a concentration in professional chemist .....	91	Craft and Material Studies, Bachelor of Fine Arts (B.F.A.) .....	288
Chemistry, Bachelor of Science (B.S.) with a concentration in professional chemist with honors .....	93	Craft and material studies, minor in .....	290
Chemistry, minor in .....	95	Creative writing, minor in .....	99
Cinema Program .....	274	Criminal Justice, Bachelor of Science (B.S.) with a concentration in forensic crime scene investigation .....	455
		Criminal Justice, Bachelor of Science (B.S.) with a concentration in justice .....	456
		Criminal justice, minor in .....	468

Current mailing address .....	49	Department of Military Science and Leadership .....	133
<b>D</b>		Department of Music .....	307
da Vinci Center for Innovation .....	503	Department of Painting and Printmaking .....	326
Dance and Choreography, Bachelor of Fine Arts (B.F.A.) .....	291	Department of Philosophy .....	134
Dance and Choreography, Bachelor of Fine Arts (B.F.A.) with a concentration in performance/Richmond Ballet .....	293	Department of Photography and Film .....	328
Dance, minor in .....	295	Department of Physics .....	142
Degree options .....	54	Department of Political Science .....	144
Degree programs .....	426	Department of Psychology .....	160
Degree requirements for all undergraduate students .....	55	Department of Radiation Sciences .....	254
Degree Works .....	61	Department of Sculpture and Extended Media .....	331
Dental Hygiene Program .....	417	Department of Sociology .....	178
Dental Hygiene, Bachelor of Science (B.S.) .....	419	Department of Statistical Sciences and Operations Research .....	172
Department of Accounting .....	363	Department of Supply Chain Management and Analytics .....	414
Department of African American Studies .....	71	Department of Theatre .....	334
Department of Art Education .....	276	Departments .....	472
Department of Art History .....	279	Determination of student classification for in-state tuition purposes .....	11
Department of Biology .....	81	Division of Community Engagement .....	509
Department of Biomedical Engineering .....	428	Division of Strategic Enrollment Management .....	512
Department of Chemical and Life Science Engineering .....	431	Division of Student Affairs .....	513
Department of Chemistry .....	85	Division of Student Affairs courses .....	514
Department of Clinical Laboratory Sciences .....	251	Double major in engineering and physics .....	428
Department of Communication Arts .....	284	<b>E</b>	
Department of Computer Science .....	436	Economics Program .....	184
Department of Craft and Material Studies .....	288	Economics, Bachelor of Science (B.S.) [College of Humanities and Sciences] .....	184
Department of Dance and Choreography .....	290	Economics, Bachelor of Science (B.S.) [School of Business] .....	368
Department of Economics .....	368	Economics, minor in .....	186
Department of Electrical and Computer Engineering .....	440	Education Abroad .....	515
Department of English .....	95	Effective bulletin .....	66
Department of Fashion Design and Merchandising .....	296	Electrical Engineering, Bachelor of Science (B.S.) .....	442
Department of Finance, Insurance and Real Estate .....	371	Electrical engineering, minor in .....	445
Department of Forensic Science .....	100	English Language Program .....	516
Department of Gender, Sexuality and Women's Studies .....	107	English, Bachelor of Arts (B.A.) .....	96
Department of Graphic Design .....	299	English, minor in .....	99
Department of History .....	113	Enrichment and acceleration opportunities .....	24
Department of Information Systems .....	386	Environmental Studies, Bachelor of Science (B.S.) .....	488
Department of Interior Design .....	302	Environmental Studies, Certificate in (Post-baccalaureate undergraduate certificate) .....	490
Department of Kinesiology and Health Sciences .....	116	Environmental studies, minor in .....	490
Department of Kinetic Imaging .....	305	European studies, minor in .....	244
Department of Management .....	390	Evaluation of transfer credit .....	17
Department of Marketing .....	402	Extended Teacher Preparation Program .....	422
Department of Mathematics and Applied Mathematics .....	121	<b>F</b>	
Department of Mechanical and Nuclear Engineering .....	445	Facilities .....	422



Facilities .....	480	Graduation process .....	62
Facilities and resources .....	472	Graphic Design, Bachelor of Fine Arts (B.F.A.) .....	299
Faculty and facilities .....	471	Graphic Design, Bachelor of Fine Arts (B.F.A.) .....	349
Fashion, Bachelor of Arts (B.A.) with a concentration in fashion merchandising .....	296	Guaranteed Admission Program .....	520
Fashion, Bachelor of Fine Arts (B.F.A.) with a concentration in fashion design .....	298	<b>H</b>	
Fashion, Bachelor of Fine Arts (B.F.A.) with a concentration in fashion design .....	348	Health Sciences, Certificate in (Post-baccalaureate undergraduate certificate) .....	120
Financial aid .....	31	Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in exercise science .....	116
Financial aid .....	251	Health, Physical Education and Exercise Science, Bachelor of Science (B.S.) with a concentration in health science .....	118
Financial aid, scholarships and awards .....	356	History, Bachelor of Arts (B.A.) .....	113
Financial assistance .....	472	History, minor in .....	115
Financial assistance .....	481	Homeland Security and Emergency Preparedness, Bachelor of Arts (B.A.) .....	458
Financial Technology, Bachelor of Science (B.S.) with a concentration in actuarial science .....	379	Homeland security and emergency preparedness, minor in .....	468
Financial Technology, Bachelor of Science (B.S.) with a concentration in financial engineering .....	381	Honors Program .....	355
First-year students .....	35	Human Resource Management, Certificate in (Post-baccalaureate undergraduate certificate) .....	400
Focused Inquiry .....	499	Human resource management, minor in .....	402
Foreign Language, Bachelor of Arts (B.A.) with a concentration in French .....	216	<b>I</b>	
Foreign Language, Bachelor of Arts (B.A.) with a concentration in German .....	218	Information Systems, Bachelor of Science (B.S.) .....	386
Foreign Language, Bachelor of Arts (B.A.) with a concentration in Spanish .....	221	Information Systems, Certificate in (Post-baccalaureate undergraduate certificate) .....	389
Forensic Science, Bachelor of Science (B.S.) with a concentration in forensic biology .....	100	Interdisciplinary Degree Program in Science .....	186
Forensic Science, Bachelor of Science (B.S.) with a concentration in forensic chemistry .....	103	Interdisciplinary Studies, Bachelor of (B.I.S.) [University College] .....	500
Forensic Science, Bachelor of Science (B.S.) with a concentration in physical evidence .....	105	Interdisciplinary Studies, Bachelor of (B.I.S.) with a liberal studies for early and elementary education major [College of Humanities and Sciences] .....	181
French, minor in .....	245	Interior Design, Bachelor of Fine Arts (B.F.A.) .....	302
Freshman application deadlines .....	15	Interior Design, Bachelor of Fine Arts (B.F.A.) .....	351
<b>G</b>		International admissions .....	14
Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.) .....	107	International Management Studies, Certificate in (Undergraduate certificate) .....	241
Gender, Sexuality and Women's Studies, Bachelor of Arts (B.A.) with a concentration in health and science .....	110	International Management Studies, Certificate in (Undergraduate certificate) .....	401
Gender, sexuality and women's studies, minor in .....	113	International social justice studies, minor in .....	245
General business, minor in .....	363	International Student and Scholar Programs .....	516
General course information .....	56	International Studies, Bachelor of Arts (B.A.) with a concentration in European studies .....	223
German, minor in .....	245	International Studies, Bachelor of Arts (B.A.) with a concentration in general studies .....	227
Global Education Office .....	515	International Studies, Bachelor of Arts (B.A.) with a concentration in international social justice studies .....	229
Global Outreach .....	516	International Studies, Bachelor of Arts (B.A.) with a concentration in Latin American studies .....	233
Grade review procedure .....	59	International Studies, Bachelor of Arts (B.A.) with a concentration in world cinema .....	236
Grading and marking system .....	57	Islamic art history, minor in – VCUQatar Campus .....	355
Graduate School .....	508		

Italian studies, minor in .....	246	Mission .....	417
<b>K</b>		Mission statement .....	10
Kinetic Imaging, Bachelor of Fine Arts (B.F.A.) .....	305	Mission statement .....	471
<b>L</b>		Mission statement .....	479
L. Douglas Wilder School of Government and Public Affairs .....	452	Music, Bachelor of (B.M.) with a concentration in music education/ instrumental .....	308
Latin American studies, minor in .....	247	Music, Bachelor of (B.M.) with a concentration in music education/vocal- choral .....	310
Learning support .....	49	Music, Bachelor of (B.M.) with a concentration in performance/guitar ..	312
Licensure/certification .....	250	Music, Bachelor of (B.M.) with a concentration in performance/jazz studies .....	314
Living-learning community programs .....	501	Music, Bachelor of (B.M.) with a concentration in performance/piano ..	316
<b>M</b>		Music, Bachelor of (B.M.) with a concentration in performance/strings ..	318
Marketing, Bachelor of Science (B.S.) with a concentration in general marketing .....	403	Music, Bachelor of (B.M.) with a concentration in performance/voice ...	320
Marketing, Bachelor of Science (B.S.) with a concentration in integrated marketing communications .....	405	Music, Bachelor of (B.M.) with a concentration in performance/winds and percussion .....	322
Marketing, Bachelor of Science (B.S.) with a concentration in personal selling and business marketing .....	408	Music, Bachelor of Arts (B.A.) .....	324
Marketing, Bachelor of Science (B.S.) with a concentration in product and brand management .....	411	Music, minor in .....	325
Mass Communications, Bachelor of Science (B.S.) with a concentration in advertising/creative .....	201	<b>N</b>	
Mass Communications, Bachelor of Science (B.S.) with a concentration in advertising/strategic .....	203	New students and family programs .....	66
Mass Communications, Bachelor of Science (B.S.) with a concentration in journalism/broadcast .....	205	Nondegree-seeking student guidelines .....	51
Mass Communications, Bachelor of Science (B.S.) with a concentration in journalism/print-online .....	207	Nondegree-seeking students .....	48
Mass Communications, Bachelor of Science (B.S.) with a concentration in public relations .....	209	Nonprofit management and administration, minor in .....	159
Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in applied mathematics .....	122	Nursing, Bachelor of Science (B.S.), accelerated program .....	473
Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in biomathematics .....	124	Nursing, Bachelor of Science (B.S.), R.N.-B.S. completion program .....	475
Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in general mathematical sciences .....	126	Nursing, Bachelor of Science (B.S.), traditional program .....	476
Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in mathematics .....	129	<b>O</b>	
Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in operations research .....	172	Oak Ridge Associated Universities Consortium .....	11
Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in secondary teacher preparation .....	131	Office of Continuing and Professional Education .....	521
Mathematical Sciences, Bachelor of Science (B.S.) with a concentration in statistics .....	175	Office of Research and Innovation .....	507
Mathematics, minor in .....	133	Organization .....	422
Mechanical Engineering, Bachelor of Science (B.S.) .....	446	Orientation .....	24
Mechanical Engineering, Bachelor of Science (B.S.) with a concentration in nuclear engineering .....	448	<b>P</b>	
Mechanical engineering, minor in .....	451	Painting and Printmaking, Bachelor of Fine Arts (B.F.A.) .....	326
Media studies, minor in .....	211	Painting and Printmaking, Bachelor of Fine Arts (B.F.A.) .....	353
Medical humanities, minor in .....	115	Painting and printmaking, minor in .....	328
Mediterranean studies, minor in .....	247	Philosophy .....	249
		Philosophy .....	480
		Philosophy of law, minor in .....	142
		Philosophy, Bachelor of Arts (B.A.) .....	134
		Philosophy, Bachelor of Arts (B.A.) with a concentration in ethics and public policy .....	136
		Philosophy, Bachelor of Arts (B.A.) with a concentration in philosophy and law .....	138
		Philosophy, Bachelor of Arts (B.A.) with a concentration in philosophy and science .....	139

Philosophy, minor in .....	141	Psychology, Bachelor of Science (B.S.) with a concentration in life science .....	165
Photography and Film, Bachelor of Fine Arts (B.F.A) with a concentration in filmmaking .....	328	Psychology, Bachelor of Science (B.S.) with a concentration in pre-graduate school .....	167
Photography and Film, Bachelor of Fine Arts (B.F.A) with a concentration in photography .....	330	Psychology, Bachelor of Science (B.S.) with a concentration in urban psychology .....	169
Physics, Bachelor of Science (B.S.) .....	142	Psychology, minor in .....	171
Physics, minor in .....	144	Public management, minor in .....	160
Political Science, Bachelor of Arts (B.A.) with a concentration in civil rights .....	145	<b>R</b>	
Political Science, Bachelor of Arts (B.A.) with a concentration in comparative politics .....	146	Readmission guidelines .....	24
Political Science, Bachelor of Arts (B.A.) with a concentration in human security .....	148	Real Estate, Bachelor of Science (B.S.) .....	383
Political Science, Bachelor of Arts (B.A.) with a concentration in international relations .....	150	Registration policies .....	52
Political Science, Bachelor of Arts (B.A.) with a concentration in political theory and methodology .....	152	Religious Studies, Bachelor of Arts (B.A.) .....	239
Political Science, Bachelor of Arts (B.A.) with a concentration in politics and government .....	153	Religious studies, minor in .....	248
Political Science, Bachelor of Arts (B.A.) with a concentration in public policy and administration .....	155	Richard T. Robertson School of Media and Culture .....	200
Political Science, Bachelor of Arts (B.A.) with a concentration in U.S. government .....	157	Rights of students under the Family Educational Rights and Privacy Act .	12
Political science, minor in .....	160	Russian studies, minor in .....	248
Post-baccalaureate undergraduate certificates .....	360	<b>S</b>	
Pre-health and pre-law advising tracks .....	40	School of Allied Health Professions .....	249
Pre-health major in clinical laboratory sciences .....	36	School of Business .....	356
Pre-health major in clinical radiation sciences .....	37	School of Dentistry .....	417
Pre-health major in dental hygiene .....	38	School of Education .....	422
Pre-health major in nursing .....	39	School of Engineering .....	426
Pre-health majors .....	35	School of Medicine .....	470
Preparation for professional studies in veterinary medicine and optometry .....	48	School of Nursing .....	472
Preparation for the study of dentistry .....	41	School of Pharmacy .....	479
Preparation for the study of medicine .....	42	School of Social Work .....	481
Preparation for the study of occupational therapy .....	43	School of the Arts .....	271
Preparation for the study of pharmacy .....	45	School of the Arts in Qatar .....	345
Preparation for the study of physical therapy .....	46	School of the Arts Visual Resource Center .....	272
Product Innovation, Certificate in (Undergraduate certificate) .....	503	School of World Studies .....	212
Program offerings .....	452	Science, Bachelor of Science (B.S.) with a concentration in biology ....	186
Programs .....	250	Science, Bachelor of Science (B.S.) with a concentration in chemistry ..	190
Programs .....	271	Science, Bachelor of Science (B.S.) with a concentration in physics ....	193
Programs .....	472	Science, Bachelor of Science (B.S.) with a concentration in professional science .....	195
Psychology, Bachelor of Science (B.S.) .....	161	Sculpture, Bachelor of Fine Arts (B.F.A.) .....	332
Psychology, Bachelor of Science (B.S.) with a concentration in applied psychology .....	163	Sculpture, minor in .....	333
		Senior Citizens Higher Education Program .....	23
		Service-learning and internship opportunities .....	453
		Shared undergraduate business curriculum .....	357
		Social welfare, minor in .....	482
		Social Work, Bachelor of (B.S.W.) .....	483
		Sociology, Bachelor of Science (B.S.) .....	178
		Sociology, minor in .....	180

Spanish, minor in .....	248	Urban and Regional Studies, Bachelor of Science (B.S.) with a concentration in urban planning and policy .....	466
Spanish/English Translation and Interpretation, Certificate in (Undergraduate certificate) .....	242	Urban and regional studies, minor in .....	469
Statement of purpose .....	479	<b>V</b>	
Statistics, Certificate in (Post-baccalaureate undergraduate certificate) .....	177	VCU ASPIRE .....	509
Statistics, minor in .....	178	VCU Globe .....	516
Student conduct in the classroom .....	50	VCU Health System Authority .....	11
Student performance and behavior .....	250	VCU Leaders Engaging in Advanced Discovery living-learning program ..	501
Sustainable Innovation, Certificate in (Undergraduate certificate) .....	498	VCU Life Sciences .....	487
<b>T</b>		Venture Creation, Certificate in (Undergraduate certificate) .....	505
Termination of enrollment .....	62	<b>W</b>	
The Honors College .....	519	World cinema, minor in .....	248
The Honors College and guaranteed admission .....	26	Writing, minor in .....	100
Theatre, Bachelor of Arts (B.A.) .....	334		
Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in costume design/technical production .....	336		
Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in lighting design/technical production .....	337		
Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in performance .....	339		
Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in scene design/technical production .....	341		
Theatre, Bachelor of Fine Arts (B.F.A.) with a concentration in stage management/technical production .....	343		
Transcripts .....	61		
Transfer application deadlines .....	17		
Transfer students .....	35		
Tuition, fees and expenses .....	26		
<b>U</b>			
Undeclared students .....	35		
Undergraduate Bulletin .....	9		
Undergraduate courses .....	522		
Undergraduate information .....	68		
Undergraduate information .....	251		
Undergraduate information .....	272		
Undergraduate information .....	356		
Undergraduate information .....	427		
Undergraduate information .....	453		
Undergraduate information .....	472		
Undergraduate information .....	487		
Undergraduate study .....	13		
University College .....	499		
Urban and Regional Studies, Bachelor of Science (B.S.) .....	461		
Urban and Regional Studies, Bachelor of Science (B.S.) with a concentration in regional analysis and development .....	463		