

# Old Dominion University



## Undergraduate Catalog 2014 - 2015



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# Undergraduate Announcements

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## Nature of Announcements

Announcements contained in this publication are subject to change without notice and may not be regarded in the nature of binding obligations to the University. The University reserves the right to change any provisions or requirements. Only the Provost or designee can approve changes to the Catalog except where otherwise stated within.

When students matriculate with Old Dominion University, they come under the academic requirements of the edition of the Catalog at that time. Students may graduate under these academic requirements within a period of six years even though subsequent Catalogs may change. Academic requirements include competency requirements, general education requirements, grade point average requirements, major and minor course requirements, foreign language requirements, overall unit requirements and related curriculum matters. Grading practices, tuition, fees and other matters are not considered to be “academic requirements” and are subject to change at the discretion of the University.

Should new changes be to their advantage, undergraduate students may graduate under the conditions of the newer catalog. However, because academic programs are subject to requirements imposed by outside accrediting or certifying agencies, the Commonwealth of Virginia, and the United States of America, such outside requirements take precedence.

It is the policy of Old Dominion University to provide equal employment, educational and social opportunities for all persons, without regard to race, color, religion, sex (including pregnancy), national origin, age, veteran status, disability, political affiliation, sexual orientation or genetic information. Old Dominion University complies with the Family Rights and Privacy Act of 1974 (as amended).

The University is an Affirmative Action Equal Opportunity employer.

## Student Responsibility for Catalog Information

Students are held individually responsible for the information contained in the Undergraduate and Graduate Catalogs. Failure to read and comply with University regulations will not exempt students from whatever penalties they may incur.

# Welcome Letter from the Provost

Welcome to Old Dominion University! Located in the Hampton Roads Metropolitan area of coastal Virginia, you will find Old Dominion University to be a vibrant and active community of scholars and students.

More than 19,500 undergraduates and 5,000 graduate students comprise the Old Dominion student body. Our community includes more than 1,100 international students with more than 100 foreign countries represented. Clubs and organizations for nearly every interest – more than 300 in all – thrive at Old Dominion University, nurturing the personal and social development that is essential to the university experience.

We are committed to the success of our students. Our Academic Enhancement unit serves as the central venue for undergraduate students to locate all of the services they need to ensure their progress from the moment they enter Old Dominion University through graduation and beyond. We offer a broad range of undergraduate degree programs in our colleges of Arts and Letters, Business, Education, Engineering and Technology, Health Sciences, and Sciences. Interdisciplinary options are also available. Through our Career Advantage Program, we guarantee a practical, faculty-directed, for-credit experience related to a student's major for all undergraduate students. Our students also participate in study abroad programs in Europe, South Africa, Australia, Korea and many other international destinations.

Old Dominion University's main campus is located in the city of Norfolk, but the ODU community extends well beyond, with Regional Higher Education Centers in Virginia Beach, and in two other locations in the area. Through our distance learning programs, we deliver undergraduate courses and programs to students at community college sites and higher education centers across the Commonwealth of Virginia, at various military bases and corporations, and at several out-of-state or independent locations. A variety of course and degree programs are offered using interactive on-line Internet technologies, CD-ROM, and video streaming, to provide students the opportunity to take courses from any location.

The Honors College, with an emphasis on critical thinking and issues of global importance, offers specially designed, low-enrollment courses to honors students and selected juniors and seniors; it is also the central home for our many undergraduate research opportunities, where undergraduate students can work alongside faculty members and graduate students in cutting-edge research projects that extend our knowledge in areas as diverse as Modeling and Simulation, Bioelectrics, International Studies, Sciences, Educational Leadership, and many other disciplines. Our graduate students also have the opportunity to receive highly practical training in our professional schools such as in our MBA program, in a wide range of Education programs, and in the Health Sciences and Engineering.

Our faculty members bring a wealth of talent to our classrooms each day. Many of our faculty have been recognized on the state, national, and international levels with prestigious awards for teaching, research and service. Their lively and provocative teaching, commitment to academic excellence, and innovative research that is both fundamental and applied, enrich the surrounding region and combine into a fusion of ideas and practice that makes the Old Dominion experience a truly rewarding one for all students.

We look forward to you joining the Old Dominion University community.

Carol Simpson  
Provost

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# Academic Calendar

## First Semester 2014-15

Date	Day	Event
August 23	Saturday	Classes begin
September 1	Monday	Labor Day Holiday
October 11-14	Sat-Tues	Fall Holiday
November 4	Tuesday	Last day to withdraw from classes
Nov. 26 - 30	Wed-Sun	Thanksgiving Holiday
December 5	Friday	Classes end
December 6	Saturday	Exams begin
December 12	Friday	Exams end
December 13	Saturday	Commencement

## Second Semester 2014-15

Date	Day	Event
January 10	Saturday	Classes begin
January 17-19	Sat-Mon	Martin Luther King, Jr. Holiday
March 9-14	Mon-Sat	Spring Holiday
March 31	Tuesday	Last day to withdraw from classes
April 28	Tuesday	Classes end
April 29	Wednesday	Reading Day
April 30	Thursday	Exams begin
May 7	Thursday	Exams end
May 8, 9	Friday, Saturday	Commencement Exercises
May 9	Saturday	Degree Conferral Date

## Summer 2015

Date	Day	Event
May 18	Monday	Session 1 and 3 classes begin
May 25	Monday	Holiday - no classes held
June 27	Saturday	Session 1 classes end (including exams)
June 29	Monday	Session 2 classes begin
July 3	Friday	Holiday - no classes held
August 7	Friday	Session 3 classes end (including exams)
August 8	Saturday	Session 2 classes end (including exams)

## First Semester 2015-16

Date	Day	Event
August 22	Saturday	Classes begin
September 7	Monday	Labor Day Holiday
October 10-13	Sat-Tues	Fall Holiday
November 3	Tuesday	Last day to withdraw from classes
November 25-29	Wed-Sun	Thanksgiving Holiday
December 4	Friday	Classes end
December 5	Saturday	Exams begin
December 11	Friday	Exams end
December 12	Saturday	Commencement exercises

## Second Semester 2015-16

Date	Day	Event
January 9	Saturday	Classes begin
January 16-18	Sat-Mon	Martin Luther King Jr. Holiday
March 7-12	Mon-Sat	Spring Holiday
March 22	Tuesday	Last day to withdraw from classes
April 25	Monday	Classes end
April 26	Tuesday	Reading Day
April 27	Wednesday	Exams begin
May 4	Wednesday	Exams end
May 6, 7	Friday, Saturday	Commencement exercises
May 7	Saturday	Degree Conferral date

## Summer 2016

Date	Day	Event
May 16	Monday	Session 1 and 3 classes begin
May 30	Monday	Holiday - no classes held
June 25	Saturday	Session 1 classes end (including exams)
June 27	Monday	Session 2 classes begin
July 4	Monday	Holiday - no classes held
August 5	Friday	Session 3 classes end (including exams)
August 6	Saturday	Session 2 classes end (including exams)



# Old Dominion University

## History

Old Dominion University began its tradition of excellence when it was founded in 1930 by the College of William and Mary, the second oldest university in the United States. Established as an extension of William and Mary in Williamsburg, Virginia, and Virginia Polytechnic Institute in Blacksburg, Virginia, Old Dominion began educating teachers and engineers. The two-year school rapidly evolved into a four-year institution, and was granted independence in 1962 as Old Dominion College.

Considerable growth in enrollment, the expansion of research facilities and preparation for the addition of graduate programs led the Board of Visitors to approve the name change to Old Dominion University. Now Old Dominion is a powerhouse for higher education with six colleges: Arts and Letters, Business, Education, Engineering and Technology, Health Sciences and Sciences. Old Dominion has offered master's degrees since 1964 and Ph.D.s since 1971. Students currently choose from 69 baccalaureate programs, 55 master's programs, two education specialist programs and 42 doctoral programs. The University has achieved designation as a Research University (high research activity) from the Carnegie Foundation for the Advancement of Teaching.

Proud of its past, Old Dominion constantly looks to the future and prides itself on its continually expanding research and teaching programs. An ever-evolving university, Old Dominion is an agent of change for its students, for the region and the nation it serves. Old Dominion is Virginia's forward-focused, public doctoral research university for students from around the world who want a rigorous academic experience in a profoundly multicultural community. Our nationally recognized faculty use real-world expertise and innovative teaching methods to challenge students to achieve their highest goals. Our determined entrepreneurial approach to problem-solving drives cutting-edge research, eminent scholarship and strategic partnerships with government, business, industry, organizations and the arts.

## Students

The students at Old Dominion share a special sense of excitement derived in part from the rich tapestry of backgrounds, cultures and ages represented here. Our students hail from all 50 states and more than 100 countries. Studying in this multicultural, international environment, and taking advantage of our guaranteed internship program, offers students a true edge after they graduate and begin to compete for jobs in the "real world."

Among ODU's outstanding students in recent years are a Rhodes Scholar, Truman Scholar and three USA Today Academic All-Americans, as well as the first undergraduate in the commonwealth of Virginia to earn a patent. The University's alumni ranks include an Emmy Award-winning television producer, a United States Air Force astronaut, the former Vice Chief of Naval Operations, the commander, U.S. Central Command, the former chief of surgery at Walter Reed Army Medical Center, award-winning authors, engineers and scientists, and professional coaches and athletes.

More than 19,500 undergraduates and 5,000 graduate students comprise the Old Dominion student body. Residence halls and apartments on campus house more than 4,500 students, while many other students live nearby within walking distance of the campus. Another 4,000 are distance learners located throughout Virginia and other states - even on ships at sea - who rarely ever set foot on the campus. A significant percentage of students are in some way connected to the military.

Students in search of extracurricular activities don't have far to look. The University boasts more than 300 student clubs and organizations. The Office of Leadership and Student Involvement (LSI) sponsors a wide variety of programs that complement academic excellence, offer a supportive environment, engage students in various learning experiences and provide them with opportunities to interact with a diversity of groups and individuals. LSI is primarily responsible for commuter services, clubs and organizations, Greek-letter organizations, leadership programs, service and volunteerism, and weekend activities.

## The Norfolk Campus and Region

Situated on 251 acres near downtown Norfolk, Old Dominion University's main campus stretches from the Elizabeth River to the Lafayette River, and watching sunsets on the water is a natural pastime for our students. With its garden areas, reflecting pools and spacious green lawns bordered by tree-lined walkways, the campus offers the best of both worlds - a beautiful setting and just minutes away from Hampton Roads' largest cities.

One of the most exciting developments on the campus today is the University Village, with its impressive centerpiece, the Ted Constant Convocation Center, which opened its doors in 2002 and hosts everything from basketball games to concerts to commencements. This 75-acre development at the east end of campus is home to 960 modern student apartments, a variety of restaurants and shops, a hotel, research facilities, an art gallery, and bookstore.

On the main campus, at the west end of the grassy, five-acre Kaufman Mall, lies Webb University Center, a spacious facility that dazzles with its two-story glass facade, creating an outdoor ambiance and providing a sunny home - in any season - for student life. At the north end of campus, a stroll along the brick sidewalks of the Williamsburg Lawn, with its towering willow oak trees, offers students and visitors a trip back in time to the beginnings of the University.

Old Dominion's 75th anniversary in 2005 found an impressive array of cutting-edge facilities that have created a campus that's ideal for the pursuit of a diverse number of majors. Among these are the fully automated Perry Library, with more than 2.4 million titles, state-of-the-art laboratories in the sciences and engineering, the E.V. Williams Engineering and Computational Sciences Building, and the new Systems Research Building. The campus is also home to Pretlow Planetarium, the Lions Child Study Center, new, superior facilities for clinical work in the health sciences, a modern Oceanography and Physics Building, the Gornto TELETECHNET Center and the Dieln Fine and Performing Arts Center. Recent additions include the Student Success Center and Learning Commons, an orchid conservatory and research building, as well as renovation to the Technology Building and the Batten Arts and Letters Building, all of which will further provide expanded opportunities for our students in the arts, sciences, health sciences and engineering. The campus boasts a variety of indoor and outdoor sports facilities. A completely new student recreational center opened in 2009.

Further enhancing the on-campus engineering and science curricula, the University has a significant presence in the Applied Research Center at the Department of Energy's Jefferson Laboratories in Newport News; continues to expand its Reidy Research Center for Bioelectronics and the Virginia Modeling, Analysis, and Simulation Center on the Portsmouth-Suffolk border; and owns and manages the Blackwater Ecological Preserve in Zuni.

The University Village is home to several new and renovated facilities in the performing and visual arts. The University Theatre hosts performances ranging from modern dance through classical drama on a traditional proscenium stage. More experimental performances are held in the "black box" setting of the adjacent Goode Theatre. Across Monarch Way, the Department of Art is housed in the newly constructed Barry Arts Building and the soon-to-be constructed James A. Hixon Art Studio Building and Annex. Together they will offer state of the art studios in printmaking, drawing, painting, fibers, graphic design, and metalsmithing. The nearby Baron and Ellin Gordon Art Galleries exhibits works by well-known twentieth- and twenty-first century self-taught artists.

Only 20 miles from the sand and surf of Virginia Beach and just 40 miles from historic Williamsburg, ODU's Norfolk campus, in one of the nation's oldest seaports and one of today's busiest international seaports on the east coast, offers an attractive location for study and leisure. Prospective students and families are welcome to visit the campus Monday through Saturday throughout the year.

## Faculty

More than 750 full-time and 650 part-time faculty bring a wealth of talent to our classrooms each day. Their lively, provocative teaching, research and

applied experience, along with their commitment to academic excellence, combine to make the Old Dominion experience a rewarding one for students.

Many of our faculty have been recognized on the state and national levels with awards for teaching, research and service. Since 1990, Old Dominion University faculty have won three professor of the year awards from the Carnegie Institute for the Advancement of Teaching, one Humboldt Award, three Virginia Outstanding Scientist awards sponsored by the Science Museum of Virginia, and 27 Virginia Outstanding Faculty Awards that are sponsored by the State Council of Higher Education for Virginia. Among our faculty ranks you will find nationally and internationally recognized scientists, engineers, educators and authors.

Faculty also serve as the primary academic advisers to our students, beginning in the freshman year. These relationships offer a special opportunity for new students to understand their chosen majors from the perspective of extensive experience and insight that only a professor can offer.

Because of our location and our relationship with dozens of corporations, federal facilities, the armed services, health care services and the tourist industry, faculty at Old Dominion bring a real-world, problem-solving focus to the classroom that makes learning come to life.

## A Global Vision

Old Dominion University has made an extraordinary commitment to be recognized as a globally focused institution. This commitment is reflected in a series of recent innovations including:

- International Student Leadership Awards for outstanding leadership and academic achievement to Old Dominion's diverse international student community
- Provost Award for Leadership in International Education, recognizing faculty leadership in program innovation
- Dean's Education Abroad Awards, expanding financial support to bring study abroad within reach for more undergraduates
- ICAP, adding a global dimension to the University's innovative Career Advantage Program
- The Office of International Programs, a comprehensive support office that facilitates continued global exploration and innovation

For more information visit [www.odu.edu/oduhome/international.shtml](http://www.odu.edu/oduhome/international.shtml).

## Outside the Classroom

Clubs and organizations for nearly every interest—more than 300 in all—thrive at Old Dominion, nurturing the personal and social development that is essential to the University experience. Clubs for every college and most majors, sororities and fraternities, an Honor Council, Student Government, Student Activities Council, and numerous recreational sports teams and athletic clubs make it easy to get involved at Old Dominion. In addition, ROTC programs are available for the Navy, Army and Marine Corps.

The benefits and rewards of joining one or more student organizations vary depending on you! Some of the best reasons for getting involved are making new friends, leadership development, taking advantage of opportunities, exploring careers and gaining that Monarch Pride!

Eighteen NCAA Division I sports bring pride and spirit to campus life each year, including football, and Old Dominion Monarchs have won 32 team and individual national titles, including four in basketball, nine in field hockey and 15 in sailing.

## The Mission of the University

### Mission

Old Dominion University, located in the City of Norfolk in the metropolitan Hampton Roads region of coastal Virginia, is a dynamic public research institution that serves its students and enriches the Commonwealth of Virginia, the nation and the world through rigorous academic programs, strategic partnerships, and active civic engagement.

## Background

Old Dominion University is located in Hampton Roads, one of the world's major seaports. Since the early seventeenth century, Hampton Roads has been the state's gateway to the rest of the world and the world's gateway to Virginia in commerce and industry, in recreation and culture, and in national security. Now a complex of seven major cities, it is a microcosm of the opportunities and challenges of contemporary urban America. It is also a major center for research and development and a home for extensive scientific and technological activities in marine science, aerospace, ship design and construction, advanced electronics, and nuclear physics.

The University takes its unique character from Hampton Roads as it provides leadership to the state and nation in teaching, research, and service. Thus the University has a special mission for the Commonwealth in commerce, and in international affairs and cultures. It has a significant commitment in science, engineering and technology, particularly in fields of major importance to the region. As a metropolitan institution, the University places particular emphasis upon urban issues, including education and health care, and upon fine and performing arts.

As one of America's major ports, Hampton Roads is the locus of national and international military commands, and the home of a culturally diverse population. The University therefore has natural strengths in activities having international outreach. Faculty members in such fields as business, economics, international studies, geography and the sciences strive to design curricula, teach courses, and encourage foreign exchanges that enhance the University's role as Virginia's international institution.

The Hampton Roads scientific environment provides special opportunities for science and engineering faculty to emphasize research and graduate programs in such fields as marine science, aerospace, and advanced electronics. Global ocean studies and cooperative research at NASA receive particular attention, as University researchers collaborate with U.S. and foreign engineers and scientists.

Urban issues are addressed by programs in public administration, education, the social sciences, and the health professions. The richness of Hampton Roads' artistic life gives great vitality to the University's programs in the visual arts, music, theater, and dance.

## Mission Support

Old Dominion University serves the needs of several internal and external constituents with its resources. These include: current and prospective students seeking undergraduate, graduate, and continuing education programs; business and industry; government agencies at all levels; the military; research organizations; and the community at large regionally statewide, nationally, and internationally. These constituencies are discussed in greater detail in the following paragraphs.

Old Dominion University offers a wide array of undergraduate programs, all of which meet national standards of excellence. Every Old Dominion undergraduate student follows a general education program that is designed to develop the intellectual skills of critical thinking and problem solving and to encompass the breadth of understanding needed for personal growth and achievement and for responsible citizenship. This general education program places special emphasis upon appreciation of the arts and upon understanding the perspectives of women, minorities, and non-Western cultures. Each undergraduate chooses a major program in the liberal arts or sciences or in a technological or professional field.

Old Dominion University's graduate offerings are focused on society's need for advanced professional education and on specialized programs at the master's and doctoral levels for which the institution is prepared through unusual strength of faculty or special geographic advantages. All graduate programs meet national standards of excellence.

As a national leader in the field of technology-delivered distance learning, the University strives to enhance the quality of the educational experience, wherever education is delivered, by applying emerging technologies. It also supports research to explore the impact of these technologies on the teaching-learning process. By utilizing these technologies and by partnering with institutions of higher education, corporations, and governmental

entities, the University is able to provide undergraduate and graduate degree programs to students across time and geographic boundaries.

Because of its commitment to Hampton Roads and its emphasis on creative innovation, Old Dominion University offers life-long learning opportunities through credit and noncredit courses and brings educational services and programs to the people of Hampton Roads at several off-campus centers. The University has a responsibility to serve the many members of the military services and their families. The military forms a unique combination of national and international constituents because they are from other locales in the United States and are looking to become, among other things, internationally capable in an international environment.

As a center of learning, Old Dominion University is committed to the principle of free inquiry. The University faculty of distinguished teacher-scholars seek to pass on the best in academic tradition while establishing themselves at the forefront of discovery and creativity. As partners in the development of the University's future, the faculty enjoy full academic freedom and have a recognized role in the decision-making process of the University. Mindful of present and future needs for a multicultural academic climate, the University deems recruitment and retention of minority and women faculty members and staff to be essential.

The University is committed to providing the highest quality instruction to all of its students. Teaching excellence is encouraged through faculty development programs and appropriate recognition of superior instruction.

The discovery of new knowledge through research and creative endeavor is a central function of Old Dominion University, which values and supports faculty participation in the discovery, synthesis, application and creation of new knowledge and art forms. The institution shall promote and preserve excellence in basic and applied research as a Carnegie Foundation Doctoral Research-Extensive University which is a key production and coordination force in technology development.

The University encourages the involvement of its faculty and staff in community service. The enrichment of the lives of students and residents of Hampton Roads is fostered through University sponsored cultural activities, fine and performing arts events, and intercollegiate athletics. In addition, through applied research, consulting, and other activities, the University plays a prominent role in the development of local business and industry and serves as a resource of government agencies and both public and private educational institutions.

The University seeks in its student body a diversity of age, gender, ethnic, religious, social, and national backgrounds. It actively recruits American minority students along with students from other countries worldwide in such numbers as to have their presence make a discernible impact upon the University's educational processes. Old Dominion recognizes its mandate to serve both the academically gifted and those who have the potential for academic success despite educational, social, or economic disadvantages.

Extracurricular activities and experiences are offered that challenge students to develop a personal system of values, to think and act autonomously, to achieve physical competence, and to establish a sense of their own identity. Other services help students meet educational, personal, and health needs.

Old Dominion University depends on its alumni for advice, leadership, and support. In close collaboration with the University, the Alumni Association provides to former students opportunities to continue their participation in various aspects of university life, to advance their personal and professional development, and to sustain communication and strengthen bonds with their alma mater and fellow alumni.

To evaluate its accomplishments against its goals, a continuing process of systematic assessment is given high priority by the University. Information gained from such efforts is utilized to ensure the highest possible quality for all University programs. The Board of Visitors will conduct a periodic review of the University's mission and major goals in conjunction with representatives of the major University constituencies. The review will ensure that the mission clearly identifies the University's unique role in Virginia's public higher education system and assures that the University is

focusing its resources to be the best that it can be in that role to achieve its mission and accomplish the major goals.

Adopted by the Board of Visitors  
June 10, 1971  
Revised January 17, 1989  
Revised April 15, 1999  
Revised June 14, 2002  
Revised April 8, 2010

## Major Goals of the University

### 1. Students

Old Dominion University is a selective admission institution. The University strives to serve those students in the immediate geographical area as well as attract students from the national and international communities. Additionally, the University seeks to attract and serve a culturally and ethnically diverse student body. The University pays particular attention to identifying and admitting students who are academically gifted. As a major metropolitan university, Old Dominion University has a special commitment to serve those students who have been academically, socially, or economically disadvantaged, but who have the potential for academic success.

### 2. Faculty

Old Dominion University seeks to attract and retain a distinguished faculty of teacher-scholars. Its faculty enjoy academic freedom and have a recognized role in the decision-making process of the University. The University is committed to strengthening its faculty through the recruitment and retention of minorities and women.

### 3. Academic Programs

#### Undergraduate Programs

As a comprehensive university, Old Dominion University offers and develops quality liberal arts, science, technology and professional programs. Old Dominion University undergraduate students follow a general education program that emphasizes intellectual skills and the breadth of intercultural understanding necessary for personal growth and achievement and responsible citizenship. All Old Dominion University degree programs meet national standards of excellence.

#### Graduate Programs

Old Dominion University's graduate offerings are focused on society's need for advanced professional education and on specialized programs at the master's and doctoral levels for which the institution is prepared through unusual strength of faculty or special geographic advantages. In selected graduate programs, the University aspires to international leadership.

#### Special Emphasis Areas

Because Hampton Roads is a major international maritime and commerce center that is Virginia's window to the nation and world, the University has a special mission for the Commonwealth in commerce, and in international affairs and cultures. With the principal marine and aerospace activities of the Commonwealth concentrated in Hampton Roads, the University has a significant commitment to science, engineering and technology, specifically in marine science, aerospace and other fields of major importance to the region. Due to its location in a large metropolitan area, Old Dominion University places particular emphasis on urban issues, including education and health care, and on fine and performing arts.

### 4. Teaching

Old Dominion University is committed to providing the highest quality instruction to all of its students. Teaching excellence is encouraged through faculty development programs and appropriate recognition of superior instruction.

### 5. Research, Scholarship and Creativity

Old Dominion University is a center of learning committed to the principle of free inquiry. The University seeks to participate in the acquisition,

discovery, synthesis, application, and creation of new knowledge and art forms through research, scholarly endeavor and creative undertakings by faculty and students. In selected areas of research, scholarship and creativity, the University strives for international recognition.

## 6. Distance Learning

As a national leader in the field of technology-delivered distance learning, Old Dominion University is committed to providing academic programs to a diverse national and international population. The University seeks partnerships and alliances that will facilitate delivering those programs to place-bound students.

## 7. Life-long Learning

Old Dominion University is committed to the concept of life-long learning, and offers credit and noncredit courses throughout the region. The University seeks to develop off-campus centers to bring educational services and programs to the citizens of the region. Because of the major Armed Forces presence in Hampton Roads, the University is particularly cognizant of its responsibility to serve members of the military services and their families.

## 8. Community Service

Community service is an important part of the University's mission. Particular importance is attached to the enrichment of the lives of students and residents of Hampton Roads through University cultural activities, fine and performing arts events, and recreational, intramural and intercollegiate athletics. The University acts as a resource to business, industrial, health care and educational organizations, as well as to the agencies of local, state and federal government. The University is committed through applied research, consulting and other activities to playing a major role in advancing the overall development of Hampton Roads.

## 9. Student Life

The University provides opportunities for student development outside of the classroom. Programs are offered to enhance personal and social growth of individual students, to provide an exciting and stimulating collegiate environment and to enable students to cope with educational, career, and health needs. Students choosing to live in on-campus housing benefit from programs especially designed to promote student educational and personal development.

## 10. Alumni

Alumni are an important part of the University community. Through outreach programs, participation on advisory committees, and a variety of professional and social activities, the University maintains a close relationship with its alumni and seeks alumni involvement and support for planning and development purposes.

## 11. Quality

Improvement of the University is a continual process. The foregoing goals provide criteria for the rigorous and regular evaluation of the quality, pertinence and effectiveness of academic and other University programs. These goals also provide criteria for the assessment of student achievement and the performance of members of the faculty, administration, and staff.

Adopted by the Board of Visitors  
January 17, 1989  
Revised April 15, 1999

## General Statement of Policy

Within the limits of the University's facilities as to numbers that can be accommodated, admission to Old Dominion University is open to all qualified students without regard to race, color, religion, national origin, sex (including pregnancy), age, veteran status, disability, political affiliation, sexual orientation, gender identity, or genetic information; the facilities and services of the University are open to all enrolled students on those same bases, and all policies and standards of the University, including those governing employment, are applied accordingly. Students having concerns

of this nature should contact the assistant vice president for institutional equity and diversity.

## Accreditations

Old Dominion University is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award baccalaureate, masters, education specialist, and doctoral degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the status of Old Dominion University.

Numerous programs of study at the University are accredited by specialized accrediting agencies that are recognized by the Council on Higher Education Accreditation (CHEA), the U.S. Department of Education, and other agencies.

The baccalaureate degrees in civil engineering, computer engineering, electrical engineering, and mechanical engineering are accredited by the Engineering Accreditation Commission (EAC) of ABET, <http://www.abet.org/>. The engineering technology programs in civil engineering technology, electrical engineering technology, and mechanical engineering technology are accredited by the Engineering Technology Accreditation Commission (ETAC) of ABET, <http://www.abet.org/>

The teacher education unit in the Colleges of Arts and Letters, Education and Sciences is accredited by the National Council for Accreditation of Teacher Education (NCATE). The following programs are nationally recognized through their specialized professional associations and NCATE: English/language arts, math, reading specialist, elementary education, special education, educational leadership, library science, technology education, and middle school. The graduate program in music education is accredited by the National Association of Schools of Music. The Children's Learning and Research Center is accredited by the Southern Association of Colleges and Schools Commission on Colleges and Council on Accreditation and School Improvement (SACS/CASI).

The park, recreation and tourism studies program is accredited by the Council on Accreditation for Parks, Recreation, Tourism and Related Professions (COAPRT). The undergraduate program in exercise science is accredited by the Commission on Accreditation of Allied-Health Education Programs (CAAHEP). The graduate program in speech-language pathology is accredited by the Council on Academic Accreditation in Speech-Language Pathology of the American Speech-Language-Hearing Association. The community, mental health, school, and college counseling master's and counselor education doctoral degree programs are accredited by the Council on Accreditation of Counseling and Related Educational Programs (CACREP).

The doctoral program in clinical psychology is accredited by the American Psychological Association. The undergraduate program in chemistry is American Chemical Society certified.

The undergraduate and graduate business programs of the Strome College of Business are accredited by The Association to Advance Collegiate Schools of Business (AACSB)-International. The undergraduate and master's degrees in accounting are also accredited by the AACSB-International. The master's degree in public administration is accredited by the National Association of Schools of Public Affairs and Administration.

The program in dental hygiene is accredited by the American Dental Association Commission on Dental Accreditation. The baccalaureate and master's nursing programs are accredited by the Commission on Collegiate Nursing Education and approved by the Virginia Board of Nursing. Graduate nursing programs are accredited and approved by the Commission on Collegiate Nursing Education, the Pediatric Nursing Certification Board, the National Nurses Certification Corporation, American Nurses Certification Corporation, and the American College of Nurse Practitioners. The certified registered nurse anesthetist specialty is accredited by the Council on Accreditation of Nurse Anesthesia Educational Programs. The medical technology program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences, 5600 N River Road, Suite 720, Rosemont, IL 60018, 773 714-8880. The physical therapy program is accredited by the American Physical Therapy Association, Commission on Accreditation in Physical Therapy Education (CAPTE). The graduate program in athletic

training is accredited by the Commission on Accreditation of Athletic Training Education (CAATE). The environmental health programs have been awarded accreditation from the National Environmental Health Science and Protection Accreditation Council. The nuclear medicine technology program is accredited by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology. The Master of Public Health program has received accreditation from the Council on Education for Public Health. The cytotechnology certificate program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). The ophthalmic technology certificate program is accredited by the Committee on Accreditation for Ophthalmic Medical Personnel (CoA-OMP). The health services administration track in the Bachelor of Health Sciences is certified by the Association of University Programs in Health Administration (AUPHA).

The Department of Music is a full member of the National Association of Schools of Music. The Department of Art is a full member of the National Association of Schools of Art and Design. The theatre program is accredited by the National Association of Schools of Theatre.

## Affiliations

The University is a member of the Southern Association of Colleges and Schools, the American Council on Education, the National Commission on Accrediting, the Council of Graduate Schools in the United States, the American Association of State Colleges and Universities, the American Association for Higher Education, the Association of American Colleges and Universities, the Association of Governing Boards of Universities and Colleges, the Association of Urban Universities, the Council for the Advancement and Support of Education, the National Association of State Universities and Land Grant Colleges, the National Commission for Co-op Education, the Southeastern University Research Association, the American Association of University Women, the University Extension Association, the National Society for Experiential Education, the Universities Space Research Association, the American Association of Collegiate Schools of Business, the National Council for Accreditation of Teacher Education, the Association of University Evening Colleges, the National Association of College and University Summer Sessions, the Association of Virginia Colleges, the Association of Schools of Allied Health Professions, the American Association of Dental Schools, the American Society for Engineering Education, the Consortium for Oceanographic Research and Education, and the Conference of Southern Graduate Schools. The University is also a Division I member of the National Collegiate Athletic Association (NCAA) and Conference USA (C-USA).

Old Dominion University is authorized by the Washington Student Achievement Council and meets the requirements and minimum educational standards established for degree-granting institutions under the Degree-Granting Institutions Act. This authorization is subject to periodic review and authorizes Old Dominion University to offer specific degree programs. The Council may be contacted for a list of currently authorized programs. Authorization by the Council does not carry with it an endorsement by the Council of the institution or its programs. Any person desiring information about the requirements of the act or the applicability of those requirements to the institution may contact the Council at P.O. Box 43430, Olympia, WA 98504-3430.

## Distinguished Faculty Chairs and Professorships

In 1964, Virginia became the first state in the nation to establish an Eminent Scholars Program. Virginia encourages donors to create endowments to attract and retain outstanding faculty members by matching the income from these endowments, thus doubling the impact of the donors' gifts.

The generosity of several individuals and groups has made it possible for the University to establish chairs and professorships to support faculty members and their scholarly activities through this program. Included in these gifts are the following:

### The P. Stephen Barna Professorship Endowment

Mr. E. James Hayes, a 1989 alumnus of Old Dominion University, established a professorship for aerospace engineering in the Frank Batten College of Engineering and Technology in 2003.

### The Richard F. Barry, Jr. Chair

Established in 1997, this endowment provides support for a chair in the College of Sciences Department of Mathematics and Statistics. Richard F. Barry III, a former rector and member of the University's Board of Visitors and former Vice Chairman of Landmark Communications, Inc., created the endowment in honor of his father who taught mathematics at the University.

### The Batten Chairs

The Batten Chairs were established in 2003 by Frank and Jane Batten. Mr. Batten, who passed away in 2009, was the retired Chairman and CEO of Landmark Communications and the first rector of the Board of Visitors. The Batten's \$32 million gift, the largest in Old Dominion's history, benefits all six of the University's colleges with emphasis to the Frank Batten College of Engineering and Technology and the College of Sciences. The Batten Chairs include:

- Batten Endowed Chair in Jewish Studies
- Batten Endowed Chair in Counseling
- Batten Endowed Chair in Computational Engineering
- Batten Endowed Chair in System of Systems Engineering
- Batten Endowed Chair in Bioelectronics Engineering
- Batten Endowed Chair in Micro- and Nano-electronics Engineering
- Batten Endowed Chair in Biomedical Engineering
- Batten Endowed Chair in Advanced Transportation Engineering
- Batten Endowed Chair in Science
- Batten Endowed Chair in Health Sciences

### The Frederick Wharton Beazley Professorship

Created by an anonymous donor in 1988, the professorship in the Strome College of Business was established to honor Portsmouth philanthropist, Mr. F. W. Beazley.

### The Bioinformatics Professor

The Bioinformatics Professor endowment was established in 1992 within the College of Sciences by the Department of Computer Science.

### The Strome College of Business Endowed Professorship in Accounting

The Dean of the Strome College of Business established a professorship in 2006 to attract or retain an accounting scholar. The endowment was funded initially by KPMG Partners.

### The Richard T. Cheng Chair in Computer Science

In 1998, former faculty member Dr. Richard Cheng endowed a chair in the department in which he helped establish accreditation. He is the former Chairman and CEO of ECI Systems and Engineering.

### The Commonwealth Professorships

Provided by an anonymous donor as a substantial endowment gift in 1967, the endowment supports professorships in any of the University's six colleges.

### The Constance F. and Colgate W. Darden Professorships

The Dardens endowed two professorships, one in education and one in history, in 1976. The Darden College of Education was named in honor of Mr. Darden, a U.S. Congressman, former Virginia Governor and President of the University of Virginia.

## **The Mina Hohenberg Darden Chair in Creative Writing**

This endowed English department professorship was initiated in 1997 as a memorial to Mina Hohenberg Darden by her family and friends. Mrs. Darden received three M.A. degrees from Old Dominion and was working toward an M.F.A. in poetry.

## **The Diehn Chair in Music**

The Diehn Fund, established by the estate of F. Ludwig Diehn, provided the funding in 1999 for a chair in music. The Diehn Fund also supports the Diehn Concert Series and the Diehn Fine and Performing Arts Center.

## **The Dragas Professorship in International Studies Endowment**

This endowment was established in 1996 by the George and Grace Dragas Foundation to create a professorship in international studies. Mr. Dragas is an alumnus and former rector of the University's Board of Visitors.

## **The Ray Ferrari Endowed Professorship**

Mr. E. James Hayes, a 1989 alumnus of Old Dominion University, instituted an engineering department professorship in 1997 to honor his mechanical engineering technology professor and mentor, Ray Ferrari.

## **The Mary Payne Hogan Endowed Professorship**

Established in honor of Mary Payne Hogan, the endowment was created in 1997 by an anonymous donor. The professorship supports the College of Sciences, specifically in botany.

## **The Louis I. Jaffe Professorship**

In 1968, an anonymous donor created a professorship in the College of Arts and Letters in memory of the Pulitzer Prize-winning editor of The Virginian-Pilot, Mr. Jaffe.

## **The George M. and Linda H. Kaufman Professorship**

The Kaufmans endowed this professorship in 1985. A lectureship in public affairs also bears their name. Mrs. Kaufman is a former member of the Board of Visitors. Mr. Kaufmann led the effort to landscape the University's mall, which was named in honor of his parents.

## **The William E. Lobeck, Jr. Endowed Chair**

Established in 2002 by the Lobeck-Taylor Foundation, this funding created an endowed chair in advanced engineering environments in the Frank Batten College of Engineering and Technology. Mr. Lobeck is an alumnus and former president of the Auto Nation Rental Group of Republic Industries.

## **The Mitsubishi Kasei Professorship in Manufacturing Engineering**

The Mitsubishi Kasei Corporation in 1990 established this professorship in manufacturing engineering in the Batten College of Engineering and Technology.

## **The Ruth M. & Perry E. Morgan Endowed Professorship**

Mr. Perry Morgan, former Editor-in-Chief of The Virginian Pilot, established a professorship in the College of Arts & Letters in 1996 in honor of his wife, Ruth. The incumbent must have a doctorate in American literature with an emphasis in Southern literature.

## **Rosanne Keeley Norris Professorship**

Frederick J. Norris '78, through a bequest in his will, established a professorship in 2007 in memory of his mother, Mrs. Rosanne Keeley Norris, who devoted her career to primary education in the California and Massachusetts public schools. Mr. Norris desired to assist the University in attracting and retaining outstanding faculty in the Darden College of Education.

## **Oceanography Professorships**

A challenge gift from the Norfolk Foundation in 1975 and gifts in response from corporations, friends, and alumni made possible an endowment to support several professorships in oceanography.

## **The Samuel L. and Fay M. Slover Chairs**

A 1967 bequest from Mrs. Slover established an endowment that supports three chairs in oceanography. Col. Slover was the owner of The Virginian-Pilot and The Ledger Star.

## **The Oscar F. Smith Chair**

The Oscar F. Smith Foundation made a grant in 1968 to establish an endowed chair in oceanography. The late Mr. Smith was president of Norfolk Shipbuilding and Drydock, Co., now Norshipco.

## **The William B. Spong, Jr., Professorship**

In 1988, The Landmark Charitable Foundation endowed a professorship on behalf of The Virginian-Pilot and The Ledger Star to honor the former U. S. Senator and President of Old Dominion University. The professorship is for a faculty member in the Strome College of Business.

## **The Robert M. Stanton Chair in Real Estate and Economic Development**

Mr. Robert M. Stanton, a 1961 alumnus of Old Dominion University and former rector of the Board of Visitors, established a chair in real estate and economic development in the Strome College of Business in 2003. The purpose of the chair is to help develop and enhance the Center for Real Estate and Economic Development into a nationally recognized institution. Mr. Stanton was the first chair of the Real Estate Foundation.

## **The Robert Stiffler Distinguished Professorship in Botany**

The Robert Stiffler Distinguished Professorship in Botany was created in 2003 by an anonymous donor. The professorship in the College of Sciences honors 28 years of Robert Stiffler's service to The Virginian-Pilot and the community as a gardening columnist and expert. The chair will help Old Dominion University and the Norfolk Botanical Garden fulfill their research goals in the field of botany.

## **The Jesse and Loleta White Lectureship**

Created in 1992 by the Aphasia Foundation of Virginia, this endowment supports a faculty position in the Child Study Center within the Darden College of Education.

## **E.V. Williams Faculty Fellowship Endowment**

Established in 2005 through a bequest of Mr. E. Virginius Williams for the Strome College of Business.

## **E.V. Williams Endowed Chair in Strategic Leadership**

Established in 2005 through a bequest of Mr. E. Virginius Williams for the Strome College of Business.

## **Educational Foundation**

The Old Dominion University Educational Foundation is a nonprofit 501(c)(3) corporation chartered in 1955 to receive and manage gifts that support the educational mission of the University. As of December 31, 2013, the Foundation was responsible for managing approximately \$193 million of endowment assets, including \$11.9 million of University endowments. The Foundation is supported by the University's Office of Development and is governed by a Board of Trustees consisting of alumni and friends of the University.

## **Old Dominion Athletic Foundation**

The Old Dominion Athletic Foundation is a nonprofit 501(c)(3) corporation chartered in 1964 to provide funds for the University to compete

successfully in intercollegiate athletic programs. The Foundation is governed by a Board of Trustees comprising alumni and friends of the University. Its activities are coordinated through the Department of Athletics and the Office of Development.

## **Real Estate Foundation**

The Old Dominion University Real Estate Foundation is a nonprofit 501(c)(3) corporation chartered in 1994 to receive, acquire and manage gifts of real property for the benefit of the University. The Foundation manages a number of properties near the Norfolk campus and the Virginia Beach Higher Education Center, as well as the development of the University Village. The Foundation is governed by a Board of Trustees consisting of alumni and friends of the University.

# Policies & Procedures

## Accommodations for Students with Disabilities

<http://www.odu.edu/content/dam/odu/policies/university/4000/univ-4500.pdf>

## Code of Student Conduct

<http://www.odu.edu/policy/bov/bov1500/1530>

## Electronic Messaging Policy for Official University Communication

<http://www.odu.edu/policy/university/3000/3506>

## Firearms, Weapons, and Certain Related Devices

<http://www.odu.edu/policy/bov/bov1000/1013>

## Gun & Weapon Regulation

<http://ww2.odu.edu/ao/facultyhandbook/index.php?page=ch06s16.html>

## Inclement Weather and Emergencies

<http://www.odu.edu/content/dam/odu/policies/university/1000/univ-1020.pdf>

## Interim Suspension

<http://ww2.odu.edu/ao/facultyhandbook/index.php?page=ch06s36.html>

## Old Dominion University Discrimination Complaint Procedure

<http://www.odu.edu/content/dam/odu/policies/university/6000/univ-6310.pdf>

## Sexual Misconduct Policy

<http://www.odu.edu/content/dam/odu/policies/university/4000/univ-4600.pdf>

## Sexual Harassment Policy

<http://www.odu.edu/content/dam/odu/policies/university/6000/univ-6320.pdf>

## Smoking Policy

<http://www.odu.edu/content/dam/odu/policies/university/3000/univ-3220.pdf>

## Stalking Policy

<http://www.odu.edu/content/dam/odu/policies/university/4000/univ-4601.pdf>

## Student Complaint Procedure

<http://ww2.odu.edu/ao/facultyhandbook/index.php?page=ch06s35.html>

## Student Record Policy

<http://www.odu.edu/content/dam/odu/policies/university/4000/univ-4100.pdf>

## Title IX Concerns/Sexual Misconduct

Title IX of the Education Amendments of 1972 (20 U.S.C. § 1681) prohibits discrimination based on the gender of students and employees of educational institutions that receive federal financial assistance. In accordance with its Title IX obligations, the University has designated ReNee' S. Dunman, Assistant Vice President for Institutional Equity and Diversity, as the University's Title IX Coordinator. Questions regarding Title IX, as well as concerns and complaints of non-compliance, may be directed to her. She can be contacted at the Office of Institutional Equity and Diversity, 1301 Spong Hall, Norfolk, VA 23529, (757) 683-3141, [rdunman@odu.edu](mailto:rdunman@odu.edu). Additional information about Title IX may be found on the Equity and Diversity website at <http://www.odu.edu/equity>.



# Student Resources & Services

## Division of Student Engagement and Enrollment Services

The Division of Student Engagement & Enrollment Services is responsible for the development, implementation, communication, and maintenance of an institutional focus on student success, which includes enrollment management. In partnership with the Provost and other University leaders, this area is responsible for the coordination of student success programs across the University and for student retention. The division provides creative leadership and strategic direction for a diverse array of student engagement services and programs including: Admissions (Undergraduate, Graduate, International), Assessment/Planning and Budget Management, Campus Ministries, Career Management Center, Center for Major Exploration, Counseling Services, Divisional IT Support, Financial Aid, Housing and Residence Life, Intercultural Relations, International Student Programming, Recreation and Wellness, Student Activities and Leadership, Student Conduct and Academic Integrity, Student Engagement, Student Health Center, Student Ombudsperson Services, Student Transition and Family Programs, Summer Camps and Conferences, Transfer Evaluation Services, and Women's Center.

## Office of Leadership and Student Involvement

Involvement in campus life contributes to students' overall development. By discovering and participating in co-curricular activities, students can develop their interpersonal and leadership skills and increase their career-related learning. The Office of Leadership and Student Involvement (LSI) provides experiences, services and opportunities that promote the advancement of social and intellectual development. By encouraging student involvement, LSI promotes life-long learning, responsible citizenship and a commitment to the Monarch and surrounding communities. For more information, visit the website at <http://www.odu.edu/studentinvolvement> or call (757) 683-3446.

The office oversees the following:

### Leadership Development

To maximize and realize the potential of individual students and student organizations, the Office of Leadership and Student Involvement assists in the planning and implementation of leadership conferences, seminars, courses, and retreats throughout the academic year. These programs, available to any special interest group or student organization, focus on the identified purpose or needs of each group. Individual students interested in developing their leadership skills are also urged to participate. Events include the Leadership Lecture Series, LeaderShape, Freshman Summer Institute, and Monarch Leaders Retreat.

### Center for Service and Civic Engagement

The Center provides students with the opportunity to enhance their educational experience beyond the boundaries of the classroom by engaging in meaningful service to the campus and local and global communities. Events include Relay for Life, Blue Goes Green Week, Adopt-A-Spot, and Haul for Hunger.

### Student Organizations

There are over 300 student organizations that promote student interests in a broad range of fields. Organizations are student-run and a complete list of organizations can be found at <http://odu.orgsync.com/SearchOrgs>. To support these organizations, LSI coordinates the recognition and annual registration process for new and existing organizations, provides officer training, group development, leadership education, budget utilization, and guidance in the organization of major concerts, programs, and other activities that groups sponsor.

## U-Center

To facilitate collaboration between student organizations and members within student groups, the U-Center includes computers, work spaces, storage, a conference room and lounge area. Students can meet in the U-Center located at 1045 Webb Center.

## Fraternity and Sorority Life

OSAL advises 18 international/national fraternities and 10 international/national sororities at Old Dominion University. The purpose of these organizations includes the maintenance of high standards of fraternal life and inter-Greek relations and cooperation with the University in achieving high social standards and sound scholarship. Service to the University and the community, encouragement for leadership and brother/sisterhood are also at the forefront of Greek activity. The groups are coordinated through the National Pan-Hellenic Council (NPHC), Interfraternity Council (IFC), and Panhellenic Council (PHC), along with Leadership and Student Involvement. Top Greek leaders and scholars are eligible for membership in the Order of Omega National Greek Honor Society. Any student interested in Fraternity and Sorority Life at Old Dominion University should visit <http://www.odu.edu/life/gettinginvolved/greek>.

### Fraternities at the University

- Alpha Phi Alpha
- Kappa Alpha Psi
- Kappa Delta Rho
- Kappa Sigma
- Lambda Chi Alpha
- Lambda Upsilon Lambda
- Omega Psi Phi
- Phi Beta Sigma
- Phi Gamma Delta
- Phi Kappa Tau
- Phi Mu Alpha
- Pi Kappa Alpha
- Pi Kappa Phi
- Sigma Nu
- Sigma Phi Epsilon
- Sigma Pi
- Tau Kappa Epsilon
- Theta Chi

### Sororities at the University

- Alpha Phi
- Alpha Kappa Alpha
- Alpha Xi Delta
- Delta Zeta
- Kappa Delta
- Pi Beta Phi
- Sigma Gamma Rho
- Sigma Lambda Upsilon
- Zeta Phi Beta
- Zeta Tau Alpha

## Student Activities Council

Student Activities Council (SAC) is a student-run organization with the goal of providing quality events for Old Dominion University including films, special events, speakers, concerts, and Homecoming. Committee members help in planning and organizing these events.

## Mace and Crown Newspaper

Students at Old Dominion University publish a weekly newspaper, the Mace & Crown, every Wednesday throughout the academic semesters. In addition to keeping the campus informed, the newspaper provides students

the opportunity to develop skills in writing, photography, advertising, and management.

### **Student Government Association**

The Student Government Association (SGA) is involved in many topical issues touching all areas of University life. Participating in SGA is open to all students who may serve as elected senators or as volunteers on committees. Call 683-3438 for more information regarding these positions.

### **WODU Radio Station**

The student-operated campus radio station serves two main purposes: providing experience for students interested in broadcasting and entertaining and sharing relevant information with the student population. Students involved with WODU can develop their skills in all areas of broadcasting including management, marketing, engineering and news and sports reporting.

### **Event Management**

Through Event Management, OSAL coordinates all space allocations in Webb Center for meetings and events.

### **Promoting and Building Spirit and Pride through ODU Traditions**

OSAL sponsors events to help students feel connected and show Monarch pride.

### **Implementation of Major Programs and Events**

OSAL helps to plan and implement activities and events to enrich the lives of students. These include Main Street (the campus involvement fair), Homecoming, Student Engagement and Enrollment Services Leaders Award Ceremony, Week of Welcome, and Programs All Weekend (PAW).

## **The National Honor Society of Phi Kappa Phi**

The Old Dominion University Chapter of Phi Kappa Phi recognizes and honors superior scholarship in all academic disciplines. The Society hosts an initiation ceremony and provides scholarships for academic excellence. Membership in the Society is by invitation only, which requires both superior scholarship and good character as criteria.

## **Career Management Center**

The national award-winning Career Management Center (CMC) offers a comprehensive array of career programs for students under the auspices of the Career Advantage Program (CAP). CAP is a series of career-related events and services designed to include a credit-bearing practical work experience related to a student's major. This practical experience may take the form of an internship, cooperative education experience, clinical rotation, student teaching, or a class containing a real-world, hands-on project.

CAP invites students to link with the Career Management Center and the available resources necessary for them to gain their career advantage early in their career planning process. Services are available from the time they first begin their studies at Old Dominion University. Recognizing that all students do not follow the same path, the program is designed to meet the needs of traditional, non-traditional, transfer, commuter, and distance students alike.

The Student Employment Program is designed to assist students in locating on- or off-campus, part-time, or seasonal, or Federal Work Study (FWS) positions for those who qualify. Traditional on campus employment programs for students with Federal Work Study (FWS) include, the Student Temporary Assist Team (STAT), Community Service Internship Program (CSI), and the America Reads (AR) program. Students without FWS may qualify for hourly student employment positions. The Career Management Center lists jobs of all types, including permanent full-time positions, through ODU CareerLink. This powerful interactive web-based system is available free to students and alumni of Old Dominion University. The CareerLink database contains employer information, career information, a career event calendar and interview schedules, as well as the means to electronically apply for positions posted. CareerLink is the primary tool used by the Career Management Center to communicate with students about

various career opportunities and events to help students succeed at Old Dominion University and into their careers.

Individual career consultations and electronic assessment tools as well as seminars on career exploration are available to assist in major and career path selection. Each college has an experienced professional CMC staff assigned to offer career assistance to students at all levels. CMC maintains full service satellite offices in the Colleges of Arts and Letters, Business, Engineering and Technology, and Sciences, which house the CMC Liaison to that college. The Liaison for the College of Education operates a part-time center in conjunction with the College of Education's Career and Academic Resource Center. Hybrid satellite offices, providing assistance onsite live during published office hours and real time virtual assistance at other times via electronic communication technology, provide services to students at the Virginia Beach, Tri-Cities and Peninsula Regional Centers.

Cooperative education and internship experiences are available at the junior, senior and graduate levels. These programs allow students to gain valuable experience related to their major, while testing out possible career choices. All students are encouraged to participate in one or more practical experiences.

Professional seminars in resume writing, job search strategies, interview skills, salary negotiation and other career-related topics are offered throughout the year and are also available in video streamed and on-line versions. These are complemented by classroom and group presentations and other special career events, including employer information sessions, as well as employer and alumni career information panels and etiquette dinners.

General job fairs are held twice a year and are supplemented by specialized fairs for specific populations, including a teacher fair, a graduate recruitment fair, and a summer job fair. Graduating students can also take advantage of the On-campus Recruiting Program, which provides the opportunity to interview, on campus, with employers for entry-level positions.

Many of the programs and services available on campus are also offered on-line and via video streaming through the CMC website, ODU CareerLink, and the Cyber Career Center. The CMC has developed this exciting opportunity as part of the any-time, any-place virtual career center model for students and alumni who prefer or require assistance from a career professional through electronic means. The Cyber Career Center allows CMC staff to provide quality career assistance from a distance, replicating face-to-face services through interactive media and multiple electronic means of communication. The National Association of Colleges and Employers (NACE) recognized CMC for this initiative with the Chevron Corporation Award as the most innovative career center in the country.

More information is available 24/7/365 Live by calling the Virtual Career Assistants at 800-937-ODU1 or virtually via the internet at <http://www.odu.edu/cmc>. During normal working hours please call 757-683-4388 or visit a satellite office in one of the colleges or the main CMC office in Webb Center North, suite 2202.

## **Guaranteed Practicum and Career Advantage Program**

Old Dominion University is the only four-year, doctoral-granting institution in the United States to guarantee a practical, faculty-directed, for-credit experience related to a student's major. The Guaranteed Practicum was introduced in 1995 and is administered by the Career Management Center (CMC) as part of the Career Advantage Program (CAP) in partnership with the academic colleges.

The practicum, a practical work experience, may take the form of an internship, cooperative education experience, clinical rotation, student teaching, or a class containing a real-world, hands-on project or experience, as appropriate for each college and its majors. Classes meeting the specifications for the guaranteed practicum are clearly noted in the Courses of Instruction section of this catalog as "(Qualifies as a CAP Experience)."

The Guaranteed Practicum is the center piece of the Career Advantage Program. For more information on CAP, see the Career Management Center section of this Catalog.

## Center for Major Exploration (CME)

The primary purpose of CME is to assist students who have not selected a major upon entry to the University or who want to explore a new major at some point during their college career. This assistance is provided through individual advising and major/career exploration. The staff is concerned with supporting students in developing and evaluating their academic and career plans and providing services to enhance students' academic and future career success. CME advisors work with students to identify their skills, interests, and values, in order to match them with a major that is compatible with their strengths and preferences. CME staff work collaboratively with staff in the Career Management Center to offer additional programs and services throughout the year that address a variety of topics related to academic success, choosing a major, and career development. CME advisors teach a one-credit career and major exploration course, UNIV 120, which provides students with a structured exploration of majors and careers and is open to any student at the University during their first two years. CME advisors also provide information for students regarding academic policies and procedures, as well as information about other student services and administrative offices at the University. The Center for Major Exploration is located in 1500 Webb Center on the first floor in the North Mall; the phone number is 757-683-4805 and the website can be found at <http://www.odu.edu/ao/cme/index.shtml>.

CME uses a sequential, three-step process during a student's first semester to assist the student with deciding on a major:

1. Initial Interview – Provides an opportunity for the advisor and student to get to know each other and begin the process of exploration and discovery
2. Decision-Making Workshop – Teaches students to identify and implement good decision-making skills, as well as the process of making a thoughtful and informed major choice
3. Advising/Major Exploration Appointment – In this appointment, students work with their advisor to identify appropriate courses for the next semester that will fulfill University requirements, while assisting them in moving toward their chosen major or allowing them to explore an area of interest.

Students will stay with their CME advisor until they have chosen a major, at which point they will be referred to the appropriate major advisor.

## Counseling Services

The primary purpose of Counseling Services is to assist students with the transitions and changes they encounter during their college years. The staff helps students to better understand themselves and their potentials and to enhance problem-solving skills. The staff also lends support and assistance during times of crisis.

Counseling Services offers individual assessment, short-term individual/couples counseling, group counseling, 24-hour mental health crisis intervention, psycho-educational outreach programs and referral for long-term counseling, and psychiatric services. Consultation services are also available to students, faculty, staff and student organizations.

For more information, visit the website at [www.odu.edu/counseling](http://www.odu.edu/counseling), or call 757-683-4401. The Office of Counseling Services is located at 1526 Webb Center, North Wing.

## Educational Accessibility

The Office of Educational Accessibility is committed to creating access to higher education for students with disabilities. The University meets the requirements of Section 504 of the Rehabilitation Act of 1973 and the Americans With Disabilities Act of 1990 and its Amendments of 2008 by providing accommodations and services, which are based upon documentation submitted by the student. Reasonable accommodations are made for students with learning, medical, psychological, visual, hearing, physical, temporary mobility, and other impairments on an individual basis. Accommodations and other supportive services available in the Office of Educational Accessibility make a positive difference in the educational

experience of students with disabilities and contribute significantly to their academic success.

In order to obtain assistance, all students must provide appropriate documentation and register with the Office of Educational Accessibility. Guidelines for documentation and procedures for registration may be located at <http://www.odu.edu/educationalaccessibility>. More specific information can be obtained by calling (757) 683-4655. Student interactions with the Office of Educational Accessibility remain confidential. New students needing interpreters are expected to contact the Office of Educational Accessibility at least 45 days before registration to make arrangements. Currently enrolled students need to make arrangements for accommodations as soon as they have pre-registered for a semester.

The Office of Educational Accessibility is located at 1021 Student Success Center.

The Section 504 Coordinator, who is also Assistant Vice President for Institutional Equity and Diversity, is located at 1301 Spong Hall and can be reached at (757) 683-3141.

## Filipino American Center

In line with Old Dominion's vision of a multicultural university, the Filipino American Center responds dynamically and creatively to the academic, educational, cultural, and social concerns of Filipino Americans. It serves as a resource and research center for Philippine history and culture and the Filipino American experience. It is a center for social interaction where Filipino culture and values are promoted, revitalized and celebrated. The center serves as a cultural liaison to the University and the Hampton Roads communities. Its strategic location in the College of Arts and Letters allows for an integrated approach in crafting and encountering new avenues of culture with a distinctive academic orientation.

The Center incorporates into its programs a heightened awareness for the diverse heritage of the Filipino American. The goals of the center are to serve as a resource center for the University, the Filipino American and the Hampton Roads communities and conduct research on Filipino Americans, promote courses in Filipino American Studies, and plan summer programs or semester abroad (Philippines), and foster close linkages with Filipino American alumni.

The Filipino American Center is located in Dragas Hall, Room 2000. For more information, visit the web page at [www.al.odu.edu/filipino/](http://www.al.odu.edu/filipino/).

## Housing and Residence Life

Living on campus provides students opportunities to build life-long friendships and to develop a sense of community. Housing & Residence Life staff members facilitate a residential experience that encourages the exploration of new ideas, supports the development of community and personal growth, and strives to make meaningful connections between the academic and personal lives of students.

"Variety" is the word that best describes ODU's housing options. From traditional residence halls such as Whitehurst that includes rooms overlooking the Elizabeth River to apartment living in the University Village, students can experience university life to its fullest as residents on campus. Living on campus provides students opportunities to be active members of their community. Housing & Residence Life (HRL) staff members strive to create a residential experience that is supportive and developmental. ODU has made it a priority to create a setting where students can be successful in and outside of the classroom. Since students spend a significant amount of time in their living environment, HRL wants students to feel as if their residence hall or on-campus apartment is their "home away from home." Socializing with friends, dining in the halls, and taking advantage of academic enhancement services are just a few of the many benefits of living on-campus.

While remaining fully engaged in academic pursuits and being actively involved in campus life, participating in community service and making a positive contribution to nearby surroundings are also encouraged. Participating in HRL sponsored events, such as The Tunnel of Oppression, can be life altering experiences. Residents are also encouraged to take on

leadership roles in the halls by attaining a position with the Residence Hall Association (representative group for students living on-campus) and/or becoming a Resident Assistant or Community Assistant. Serving in a leadership capacity will give students an opportunity to help shape the experience of his or her peers' experience while at ODU. Trips to popular venues in Norfolk such as the Chrysler Museum and the Opera House can be coordinated by the resident student leaders and can add another dimension to the undergraduate experience. Living on-campus at ODU can provide endless possibilities for students who have the desire to learn as much as they can about the Hampton Roads area.

HRL wants students to experience success and understands that a significant part of that success occurs in the classroom. To complement that experience, HRL offers Community Learning Centers (technology enriched spaces) and Living-Learning Communities (LLCs) in some halls. LLCs allow students of similar majors or interests to live in a residential area together, assisted with academic-related support outside of the classroom. Typically, students within these communities make a better connection to faculty and their peers.

For further information about living on campus or employment opportunities, please visit the Housing & Residence Life website at: <http://www.odu.edu/life/housing> . For answers to specific questions, contact: Housing & Residence Life, 4601 Elkhorn Avenue, Suite 1208, Norfolk, VA 23529, call (757) 683-4283 or email: [housing@odu.edu](mailto:housing@odu.edu) (%20housing@odu.edu).

## Off-Campus Housing

Off-Campus Housing Services is the unit within Housing & Residence Life that provides guidance and support to students who desire off-campus housing accommodations. Students are provided resources and materials to help them in their search for affordable and convenient housing. Students are also provided access to the listings directory where local landlords and property managers post vacancies specifically intended for ODU students.

For further information about living off-campus please visit: <http://www.odu.edu/life/housing/off-campus-housing> . For answers to specific questions or for one-on-one assistance, contact: Off-Campus Housing Services, 4603 Elkhorn Ave. , Suite 1208, Norfolk, VA 23529 or email [offcampushousingservices@odu.edu](mailto:offcampushousingservices@odu.edu) (%20offcampushousingservices@odu.edu).

## The Office of Intercultural Relations (OIR)

### The Intercultural Center

The Intercultural Center, located at 2114 Webb Center, serves as a cultural hub for students and faculty. With its fully mediated and functional design, faculty can conduct classes, visitors can relax in plush seating while reading books from the Center's library or watching programs and DVDs on one of the 46" plasma televisions. Students have access to the computer area, can learn a new language with Rosetta Stone programs, or have a group study session. The Intercultural Center is not only a study or work space, it is also an area where students can relax and connect with friends and the University community.

### The Diversity Institute

The Diversity Institute (DI) enhances awareness, commitment, knowledge, and skills that are needed to develop leaders as change agents in a culturally diverse world. Semester-long sessions include modules and cultural learning labs that train participants on how to operate in a diverse multicultural and global setting. In addition to developing communication skills needed in a pluralistic society and expanding one's world view, DI is an excellent resume-builder. For more information, visit the Diversity Institute site at <http://www.odu.edu/life/gettinginvolved/leadership/diversity-institute>.

### International Initiatives Unit

As citizens of a new, global community, it is imperative that individuals have the skills to navigate diverse settings and successfully interact with others. Therefore, OIR is committed to the academic, social, and cultural support of the international student population, as well as providing opportunities for domestic students to enhance their own

cultural competency. OIR strives to sustain a vibrant international student community by providing an array of services, such as arrival assistance, orientation support, on- and off-campus activities, and social networking opportunities. OIR actively encourages international-domestic student relationships by providing cultural programs and events such as International Festival, International Education Week, Global Monarch Club, the International Student Advisory Board, and various cultural celebrations throughout the academic year. Thus, programs, workshops, activities, and events are designed so that participants will be prepared for successful integration into today's global society.

## Intercultural Initiatives Unit

Hispanic Heritage Month, Black History Month, Native American Month, Asian American Seasons, Interfaith Dialogues, and LGBTQ Heritage are just a few of the cultural expressions that educate the campus and Hampton Roads about the diversity within our multicultural communities. Student affinity groups facilitated by OIR allow current Monarchs the opportunity to engage and provide an active advisory role regarding OIR programs and events. Our programs, activities, and educational initiatives are designed to raise the awareness of the complexities within American cultural frameworks and how one can negotiate positive engagement across and within cultures.

## Social Entrepreneurship

The Social Entrepreneurship unit consists of the Social Entrepreneurs Council (SEC); Spark Change Theater; Intercultural Matters Series; Faculty Voice Brown Bag Series; and the Dialogue on Emerging Issues. In partnership with the SEC advisory council, the Office of Intercultural Relations presents innovative film forums, workshop series, lecture series, and informal discussions that promote faculty and student engagement and co-curricular opportunities for the exploration of social justice paradigms and intercultural systems.

The Office of Intercultural Relations is located at 2109 Webb University Center. Please visit the website at <http://www.odu.edu/oir>; OIR is on Twitter, Facebook, Instagram, and Tumblr.

## Recreation and Wellness

The Recreation and Wellness Department vision is "Through quality innovative programs and services, we provide the foundation for lifelong exploration and development of the mind, body, and spirit." The department offers programming in the following areas:

- Intramural Sports
- Informal Recreation
- Sport Clubs
- Fitness & Wellness
- Outdoor Adventure
- Aquatics
- Summer Camps
- Student Development

The Student Recreation Center is a state-of-the-art facility that features nearly 15,000 square feet of fitness equipment, a rock climbing wall, a multi-activity center gym, racquetball courts, a cycling studio, an outdoor adventure rental center, and much more. The Student Recreation Center is located at 4700 Powhatan Avenue. In addition, the Fitness Center at University Village provides participants with another state-of-the-art workout facility. Participants must be able to validate their identity with the biometric hand system or a valid University ID card when attempting to enter or participate in programs and activities sponsored by the department. For daily updates of programs and services, hours and special events, visit the webpage at <http://www.odu.edu/recreation> or contact the office at 683-3384.

## Student Health Services

Old Dominion University Student Health Services is accredited by the Accreditation Association for Ambulatory Health Care, Inc. The Health Center is located at 1007 South Webb Center (757) 683-3132, Facsimile

(757) 683-5930. Health Promotion services are located at 1525 North Webb Center (757) 683-5927.

Student Health Services provides primary outpatient care and health promotion for Old Dominion University students. These services include medical care for acute illness and minor injury, routine health care, preventive health care, and family planning. Student Health Services also provides referrals to health care providers in the local community for services beyond the scope of the campus health center. Laboratory testing sent off campus and x-rays or other diagnostic tests are done at the student's expense. Full-time Norfolk campus students should complete the immunization requirements before coming to school. Any immunizations administered at Student Health Services are done at the student's expense.

## Health History/Immunization Requirements

All entering full-time Norfolk campus students (undergraduate, graduate, transfer, and English Language Center students) are required to complete the Tuberculosis (TB) Risk Assessment on the health history form submitted to Student Health Services. Each student determined to be part of an at risk population for TB must present the results of a TB skin test (Mantoux PPD) or TB blood test to Student Health Services within two months prior to matriculation at Old Dominion University. Any student with symptoms of active TB will be required to be tested immediately. Students are expected to be in compliance with the University Policy for TB screening.

All entering full-time Norfolk campus students are required to have all their immunizations up to date. This includes the Meningitis and Hepatitis B vaccines or signed waiver on Part C of their health history form if the student declines these vaccines. Students who do not submit the required health history/immunization documentation will not be allowed to register for the second semester. A complete list of immunization requirements and health history/immunization forms are on the Student Health Services website at <http://www.odu.edu/studenthealth>.

## Health Promotion

Health promotion provides Old Dominion University students with information, education and programs to address their health concerns and needs. Health promotion focuses on the whole person and seeks to engage students in educational, experiential, and service learning opportunities to illustrate the importance of a healthy lifestyle. Health promotion is also responsible for campus-wide programs. Topics include: alcohol, drugs, sexual health, nutrition, stress and many other factors that affect student success. Students may volunteer as members of the Student Health Advisory Committee (SHAC). Call (757) 683-5927 to speak with a health educator.

## Student Health Insurance

All full-time and part-time students are encouraged to make provision for payment of charges for health services not provided by Student Health Services. The University recommends that all students carry adequate personal health insurance. International students are required to have health insurance. See the Student Health Services web site for information regarding health insurance at <http://www.odu.edu/studenthealth>.

## Student Conduct & Academic Integrity

The Office of Student Conduct & Academic Integrity (OSCAI) oversees the administration of the student conduct system as outlined in Board of Visitors Policy 1530: Code of Student Conduct. The mission of OSCAI is to promote academic and personal responsibility, facilitate resolutions that align with the interests of the University community, and collaboratively address student behavior. In support of this mission, the office provides education to the University community and serves as a resource for anyone with inquiries related to student conduct.

For more information about the Office of Student Conduct and Academic Integrity, please visit the website at [www.odu.edu/oscai](http://www.odu.edu/oscai).

Title IX of the Education Amendments of 1972 prohibits discrimination based on sex in educational programs and activities. Sexual harassment and sexual misconduct have been recognized as a form of discrimination in violation of Title IX. For information, counseling or to file a complaint of discrimination or harassment on the basis of sex, individuals may contact

the Title IX Coordinator, who is also the Assistant Vice President for Institutional Equity and Diversity, located at 1301 Spong Hall; the Assistant Vice President can be reached at (757) 683-3141 or [rdunman@odu.edu](mailto:rdunman@odu.edu).

## Student Ombudsperson Services (SOS)

Student Ombudsperson Services (SOS) provides services to students who experience administrative, academic, or personal road blocks. These services include extended absence notification, emergency grants, and administrative withdrawals from the University. SOS is available to help students achieve their personal and academic goals

ODU Cares is an extension of Student Ombudsperson Services. The Care Team was developed to provide a University-wide system of care and support for students who experience an unexpected crisis. The Care Team's role is to determine effective strategies for addressing concerns and connecting students with the appropriate resources. Student Ombudsperson Services is located in Suite 2008, second floor South Wing of Webb Center, and can be reached at (757) 683-3442 or [smims@odu.edu](mailto:smims@odu.edu). For more information please visit the SOS website at: <http://www.odu.edu/life/support/ombudsperson>.

## Webb Information Desk

Webb Information Desk provides students, faculty/staff, and guests of the University with information about departments, student organizations, activities, classes, policies, and more. In addition, the Information Desk offers the following products and services: postage stamps, student organization event tickets, car assistance program, semester locker rentals, lost and found, game room equipment, and free DVD rental service. The Webb Information Desk is located in the front lobby of Webb Center and can be reached by calling (757) 683-5914.

## Women's Center

The Women's Center offers programs and services designed to promote gender equity and address the special challenges and opportunities female students encounter in the pursuit of higher education. Recognizing the critical role that both women and men play in promoting an environment free of gender bias, Center programs are designed to educate and inspire students to achieve their personal, academic and professional potential.

The Sexual Assault Free Environment (S.A.F.E.) Program provides crisis intervention, education, advocacy and ODU policy/procedure information related to issues of sexual assault, stalking, sexual harassment, and relationship violence. W.I.L.D., Women's Institute for Leadership Development, provides an opportunity for female students to identify and develop their leadership skills through seven modules. Additional programs are offered throughout the year that address a variety of topics related to women's academic and personal success including programs in celebration of Women's History Month in March. Referrals to University and community resources are also available. Students are encouraged to get involved with the Women's Center as a volunteer, intern, or M-POWER Peer Educator.

Programs and services of the Center are open to women and men. For more information, please call 757-683-4109 or visit <http://www.odu.edu/life/support/womenscenter>.

Title IX of the Education Amendments of 1972 prohibits discrimination based on sex in educational programs and activities. Sexual harassment and sexual misconduct have been recognized as a form of discrimination in violation of Title IX. For information, counseling or to file a complaint of discrimination or harassment on the basis of sex, individuals may contact the Title IX Coordinator, who is also the Assistant Vice President for Institutional Equity and Diversity, located at 121-A Spong Hall; the Assistant Vice President can be reached at (757) 683-3141 or [rdunman@odu.edu](mailto:rdunman@odu.edu).

## Athletics

Old Dominion University's athletic program is among the most successful in the United States, boasting 28 team and four individual national championships, including three in women's basketball, nine in field hockey,

15 in sailing, a women's tennis clay court national crown, a men's basketball Division II title, and three individual wrestling Division II titles.

The Department of Intercollegiate Athletics is the home for Old Dominion University's 18 varsity programs for men and women. Old Dominion University offers competitive programs for student-athletes in the following sports:

- Football
- Men's and women's soccer
- Field hockey
- Men's and women's sailing
- Men's and women's basketball
- Wrestling
- Men's and women's swimming and diving
- Women's lacrosse
- Men's and women's golf
- Men's and women's tennis
- Baseball
- Women's rowing
- The University is reviewing additional intercollegiate program opportunities for women.

Old Dominion University is a Division I member of the National Collegiate Athletic Association (NCAA) and became a member of Conference USA (C-USA) on July 1, 2013. The 14 teams in C-USA for 2014-15 include: UNC Charlotte, Louisiana Tech, Marshall University, the University of Alabama-Birmingham, University of Southern Mississippi, Florida Atlantic University, Florida International University, Middle Tennessee State University, Old Dominion University, the University of North Texas, the University of Texas San Antonio, Rice University, the University of Texas El Paso and Western Kentucky University.

All full-time enrolled students are invited to attend intercollegiate athletic events free of charge. Beginning one week in advance of a regular season men's or women's basketball game and two weeks in advance of a football game, students can register online for admission to games at [www.odusports.com/tickets](http://www.odusports.com/tickets) (<http://www.odusports.com/tickets>) by entering their University Identification Number (UIN). A student's ID card will be activated after successfully registering for the ticket, and admission to the games is gained by swiping the University student ID card at the student entrances. A limited number of guest tickets are available for students to purchase for each game. For soccer, baseball, wrestling and other special athletic events, students are admitted at the gate by showing their current student ID card. For more information, call the Constant Convocation Center Box Office at (757) 683-4444, or check out the athletic website at [www.odusports.com](http://www.odusports.com) (<http://www.odusports.com>).

In addition, Old Dominion University provides students with a variety of recreational and intramural activities through its Recreation and Wellness Department. For more information on these activities contact the Recreation and Wellness Department at (757) 683-3384.

Title IX of the Education Amendments of 1972 prohibits discrimination based on sex in educational programs and activities. Sexual harassment and sexual misconduct have been recognized as a form of discrimination in violation of Title IX. For information, counseling or to file a complaint of discrimination or harassment on the basis of sex, individuals may contact the Title IX Coordinator, who is also the Assistant Vice President for Institutional Equity and Diversity, located at 1301 Spong Hall; the Assistant Vice President can be reached at (757) 683-3141 or [rdunman@odu.edu](mailto:rdunman@odu.edu).

## Information Technology Services (ITS)

Information Technology Services (ITS) offers faculty, staff, and students a wide range of technology services and support. The mission is to provide high-quality cost-effective computing and communications services that meet the needs of the University community.

As technology continues to change the face of higher education, ITS is committed to progressing Old Dominion University's innovative educational

delivery processes and technology resources. ITS is focused on student support and is committed to assisting students with their technology needs in order for them to be successful in all their academic endeavors.

**The ITS Help Desk** is the first point-of-contact for IT applications and services and provides centralized technology support to students, staff, and faculty. The Help Desk is located on campus in Webb Center (Room 1504). A student team provides peer-to-peer and walk-up technical support to individuals with technology questions as well as on-site support for students in University housing.

### How to Get Technical Support:

- **Email (24x7)** : Email [itshelp@odu.edu](mailto:itshelp@odu.edu) with a detailed description of the problem for assistance
- **Phone (24x7)** : Call (757) 683-3192 anytime for technical assistance (toll free 877.348.6503)
- **In Person**: Walk-up service is available in Webb Center (Room 1504) Monday through Friday - 8 a.m. to 9 p.m.  
Saturday - 8 a.m. to 4 p.m.
- **Knowledge Base**: Search for answers to FAQs at <http://kb.odu.edu>
- **Online**: Requests for assistance can be submitted online. Login using the MIDAS ID and password at <http://fp.odu.edu>.

ITS provides, maintains, and/or manages the following systems and services University-wide:

- Computing accounts for faculty, staff, and students
- Academic & instructional systems
- Administrative computing systems
- Data & telecommunications networks
- High-speed wired and wireless Internet connectivity
- MonarchVision (Cable TV)
- Media technology equipment in support of academic and University-related activities

Detailed information about these services is provided in the following paragraphs. Additional information about all computer services at Old Dominion University can be found on the ITS web site at <http://www.odu.edu/its>.

## Computer Accounts

In support of the University's mission of teaching, research, and other educational pursuits, ITS provides students with a MIDAS account (Monarch Identification and Authorization System). MIDAS is the identity and password management system for the University.

A MIDAS account uses a single ID and password to provide access to the University's integrated technology services such as: e-mail, course management systems, the myODU Portal, video streaming courses, and many other important resources.

### Creating a MIDAS account

The account is created from the MIDAS web site at <http://midas.odu.edu>. Account activation is immediate for email purpose. Access to other University and services resources may require an additional 24-48 hours. During the creation process, a security profile is established that allows the account holder to create a new password without knowing the current password.

## myODU Portal

The Old Dominion University myODU Portal, located at <http://my.odu.edu/>, provides University faculty, staff, and students a single point-of-access to their University services. Individuals may customize their portal page with links to the resources they access most frequently, including Blackboard, Leo Online, University-wide announcements, and Internet-based University email, address book and calendar.

## Student E-Mail Accounts

Student email accounts are activated automatically as part of the MIDAS account creation process. Student email accounts are provided through

Gmail and serve as a vital communication link between students and University administrators, departments and faculty members. It is the official electronic mail system for University-related communications, policies, announcements, tuition bills and other information. Student email access is available via the myODU portal at <http://my.odu.edu/>. Students can also access their email account at <http://monarchs.odu.edu>.

## The Residential Network (ResNet)

ResNet is managed by ITS and provides students living in the University residence halls and the University Village apartments with high-quality data (wired and wireless), voice, and video services. This program is supported by professional and student staff that provide technological services and support for high-speed internet access, cable television (MonarchVision), and personally owned computers and mobile devices. Sufficient wired internet connections are provided in the residence halls to allow each resident an individual connection that can be activated at the student's request. Students may also request local phone service if desired.

## Computer Labs

ITS maintains University public computer labs equipped with Windows and Macintosh-based systems and various computer applications in support of class requirements. Laser printing is available in all labs as well as remote printing in academic buildings and residence halls. Students must have a University MIDAS account (see section on Computer Accounts) to use the computers in the labs. Labs are located in: Webb Center, Virginia Beach Higher Education Center, Peninsula Higher Education Center, and Tri-Cities Higher Education Center. Additional computing resources are also available in the Learning Commons as well as some academic buildings and residence halls. Lab schedules are available on the ITS web site at <http://www.odu.edu/ts/labs-classrooms>. IT consultants are available in all labs to provide assistance with application and computer-related questions and problems.

### Virtual Computer Lab

ODU's Virtual Computer Lab is a software system that can provide 7 X 24 X 365 computer access to applications and systems for anyone that has access to a basic computer. It allows students to reserve a "virtual computer" with the desired operating system and applications via the Internet. The system has all the widely used applications at the University such as SAS, Matlab, SPSS, GIS and others. A University MIDAS account (see section on Computer Accounts) is required to access the ODU virtual computer lab. Please visit <http://www.odu.edu/ts/labs-classrooms/virtual> for more information.

## Monarch Techstore

The Monarch Techstore is a University-owned and operated service where Old Dominion students, staff, and faculty can view, test, purchase, and order the latest technology products from a variety of companies. The Techstore sells computers, hardware, software, peripherals, and supplies to the University community at special educational discount pricing. A large portion of store profits goes directly to ODU's Student Scholarship Fund. Visit <http://www.odu.edu/techstore> for more information.

### Mobile Monarch

Old Dominion University has established minimum technological requirements student computers must meet to effectively use the information technology resources offered at the University. It is strongly recommended that students have a notebook computer that at least meets the University's minimum technical specifications.

Mobile Monarch is a strongly recommended student notebook program that offers educational pricing for Apple and Dell computers. Computers in the program have been selected to meet the requirements of the University's academic computing environment.

Program notebooks are purchased at the Techstore and are typically business class systems with reliable standard components. The computers offered are sold with up to a four-year warranty. An on-campus support center is available to provide support services, including warranty repairs. Students

who purchase recommended models from the Mobile Monarch program receive priority service at the ITS Help Desk.

## Academic Software/Instructional Systems

Through the University's software licensing program, current versions and upgrades of McAfee Virus Scan software are available for students to download, free of charge, to their personal computers. Additional instructional software is available for download, such as EndNote and X-WIN 32. Visit the ITS Services and Software Catalog at <http://www.odu.edu/ts/software-services> to download software.

- Adobe Connect - Adobe Connect is an online web conferencing and collaboration tool that allows students and faculty to conduct same-time meetings and presentations. Meeting participants can interact through chats, screen sharing, file sharing, application sharing, multi-person video, dynamic white-boarding, and polling.
- Course Management System - ODU's interactive learning system Blackboard (<https://www.blackboard.odu.edu/>) helps faculty and students enhance the classroom experience by enabling continued class collaboration, facilitating feedback from peers and instructors, and allowing for unlimited access to course documents, reading assignments, and other supplementary materials. The course management system also incorporates web pages, email, discussion boards, chat rooms, online quizzes, virtual groups, and document sharing.

## Distance Learning

Old Dominion University's Office of Distance Learning delivers graduate and upper-division undergraduate courses to students using a variety of technologies. Classes are delivered to students online and on-site at partnering community college locations, military installations, and higher education centers across Virginia. Additional on-site learning locations, also known as extended campus locations, are located in Washington state and in Arizona.

Courses in programs available at a distance are offered online using a variety of delivery technologies including **Online Asynchronous** - students access course material online from any location and complete coursework at their own pace (some same-time activity may be included and courses typically follow the traditional semester schedule) and **Online Synchronous or Web Conferencing** - students access class online during a live meeting using Adobe Connect or other 2-way desktop and mobile video conferencing systems, or attend class at an on-site learning location (classes may include a combination of 2-way chat, audio, or video.) For information about specific programs and available delivery formats, visit [dl.odu.edu/programs](http://dl.odu.edu/programs).

Old Dominion University and the Virginia Community College System have a long-standing partnership making it easier for students to complete a bachelor's degree without leaving their local communities. With the Guaranteed Acceptance Agreement, students can complete the first two years of study toward a bachelor's degree at the community college and easily transfer to Old Dominion University to complete the degree program. Once accepted, students have the option of studying online, at any of over 40 Distance Learning locations, or at Old Dominion's main campus.

For more information about Distance Learning at Old Dominion University, visit <http://dl.odu.edu/>.

Title IX of the Education Amendments of 1972 prohibits discrimination based on sex in educational programs and activities. Sexual harassment and sexual misconduct have been recognized as a form of discrimination in violation of Title IX. For information, counseling or to file a complaint of discrimination or harassment on the basis of sex, individuals may contact the Title IX Coordinator, who is also the Assistant Vice President for Institutional Equity and Diversity, located at 1301 Spong Hall; the Assistant Vice President can be reached at (757) 683-3141 or [rdunman@odu.edu](mailto:rdunman@odu.edu).

## Military Outreach

Old Dominion University is proud of its affiliation with military personnel and their families who represent all branches of the armed services. Students will find a variety of programs to match their personal and professional goals through the University's six colleges. Courses are available on campus

and at a distance in live, synchronous, and anytime, asynchronous formats. Old Dominion operates sites on or near military installations in and outside Virginia where, depending on the location, students can take classes on the base. Distance learning counselors at all locations are trained to facilitate registration, admissions, and advising. Old Dominion accepts tuition assistance and serves the special needs of veterans, on campus or at distance, with a dedicated staff.

Old Dominion University is affiliated with the Service members Opportunity Colleges (SOC), DANTES, and Troops to Teachers. The University is a member of the GoArmyED network, the USAF's Associate's to Bachelor's Cooperative (AUABC), and the Navy's NCPACE and Distance Learning Partnership programs, all of which provide substantial credit for military training as well as flexibility, convenience, and affordability.

## Regional Higher Education Centers

Old Dominion University operates three easily accessible higher education centers within metropolitan Hampton Roads, located in the cities of Hampton, Portsmouth, and Virginia Beach, where degrees, certificates and services are available for commuter students. These centers offer a wide range of academic programming, including bachelor-, master- and doctoral-level degrees, as well as noncredit and credit-bearing continuing education and professional development opportunities. Courses are conducted through multiple modes, including traditional face-to-face with instructor on-site, two-way video-conferencing, web-based (via multiple platforms such as WebEx and AdobeConnect), and hybrid programming; select classrooms are also equipped with course capture technologies. Co-curricular and student support services available on-site include admissions and registration assistance, academic advising, computer labs and access to the wireless network, testing and proctoring, bookstore, and access to the University's library. ODU-Virginia Beach also features the Meyera Oberndorf Learning Commons, Waves Cafe, a Writing Center, a satellite Career Management Center, and headquarters of the MSN-Anesthesia program and the ODU-Institute for Learning in Retirement. ODU-Peninsula provides headquarters for the Virginia Space Grant Consortium. ODU-Tri-Cities is headquarters for the bachelor's degree program in Ophthalmic Technology. Each facility also provides meeting, conference and training space for student and faculty clubs and organizations, government agencies, corporations, industry, nonprofits, and other educational partners. Resources include seminar/meeting rooms, teleconferencing, and technical support. In addition, the regional higher education centers support a diverse array of community engagement efforts, ranging from cultural and arts events free and open to the public, to partnerships with local public K-12 school districts. For more information, go to <http://www.odu.edu/regionalcenters>.

ODU-Peninsula  
600 Butler Farm Road, Suite 2200  
Hampton, Virginia 23666  
757-766-5200 (switchboard); 757-766-5201 (fax)  
[phec@odu.edu](mailto:phec@odu.edu)  
<http://www.odu.edu/peninsula>

ODU-Tri-Cities  
1070 University Boulevard  
Portsmouth, VA 23703  
757-686-6220 (switchboard); 757-686-6219 (fax)  
[ttntcc@odu.edu](mailto:ttntcc@odu.edu)  
<http://www.odu.edu/tricities>

ODU-Virginia Beach  
1881 University Drive  
Virginia Beach, VA 23453  
757-368-4100 (switchboard); 757-368-4109 (fax)  
[vbhec@odu.edu](mailto:vbhec@odu.edu)  
<http://www.odu.edu/vabeach>

## Dining Services

Monarch Dining Services is responsible for many operations across campus. Webb Center is home to a wide range of dining options including Café 1201, House of Blue Food Court, and Monarch Catering. Café 1201 is a residential restaurant dining option that allows students to use their meal plans in Webb

Center and provides a value to faculty, staff, and students. Also located in Webb Center are franchise favorites like Chick-fil-A and Starbucks. Legends in Whitehurst Hall and Rogers Café in Rogers Hall are dining facilities available to all cash, credit, meal plan, Flex Points, and Monarch Plus customers. These all-you-care-to-eat locations provide a residential restaurant within the student housing facility.

Dining Services has over 15 locations across campus to satisfy a variety of cravings—including residential restaurants, food court and franchise favorites, convenience stores, and coffee shops.

Monarch Catering offers services from coffee set-ups to extensive dinner menus and everything in between.

For hours of operation and more campus dining information, please visit the website at [www.odu.edu/monarchdining](http://www.odu.edu/monarchdining).

## International Programs

Marcelo Siles, Executive Director

The Office of International Programs (OIP) coordinates activities that focus on Old Dominion University's strategic commitment to campus-wide internationalization. These activities fall into three general categories, all of which are designed to expand student understanding of our interdependent world: encouraging the incorporation of international issues and perspectives into undergraduate and graduate education; facilitating international exchange of students and faculty; and sharing international interests and expertise with the broader Hampton Roads community that Old Dominion University seeks to serve. For more detailed information, visit the OIP website at [www.odu.edu/oip](http://www.odu.edu/oip).

OIP facilitates the development of the University's cooperative agreements and exchange programs with other institutions of higher learning around the world in order to encourage exchange of students and faculty as well as collaborative research. OIP staff provide advising support for international fellowships, such as the Fulbright, Boren Awards, and the Gilman International Scholarship Program.

OIP sponsors and coordinates international programs that serve and involve the citizens of the region and the state. These may include appearances by foreign diplomats, scholars and artists, workshops for teachers and other professionals, and support for internationally-focused community organizations.

OIP includes the Office of Study Abroad, the English Language Center, and International Student and Scholar Services.

## Office of Study Abroad (OSA)

Increasing global awareness happens in both the classroom and elsewhere on Old Dominion's multicultural campus, but there is no substitute for traveling abroad to acquire a personal perspective on our increasingly interdependent world. Old Dominion students participate in a wide array of study abroad experiences as an integral part of their college education. Faculty-led programs of study in the summer and over spring break are available in different subject areas (from Service Learning in South Africa to Theatre in London to Business Studies in Korea and China). Semester and academic year study abroad programs and reciprocal student exchange programs offer long-term opportunities in virtually all areas of the world. Old Dominion is a member of study abroad consortia that sponsor high quality programs around the globe, providing opportunities for exchange with over 100 universities overseas. Regardless of one's field of study, almost all Old Dominion students can study abroad. Practically all forms of student financial aid may be applied to an academic program abroad, and travel grants are available for many programs. Dean's Education Abroad Awards are ODU scholarships that provide special support for selected majors. Internships, volunteer placements and short-term work opportunities overseas are additional options.

The Office of Study Abroad administers overseas academic programs and authorizes transfer credit from approved programs of study. OSA houses resources on study abroad opportunities and general reference materials on international travel, scholarships, internships and work abroad opportunities. A Study Abroad Fair is held every semester, and pre-departure orientation



programs and “re-entry” sessions when students return from abroad are also organized by the staff. Please visit the OSA’s web site at [www.odu.edu/studyabroad](http://www.odu.edu/studyabroad).

## English Language Center (ELC)

The English Language Center (ELC) offers intensive English language classes (six seven-week sessions per year) for international students and members of the local international community in grammar, composition, reading/vocabulary, and speaking/listening at beginning to advanced levels. This academic program primarily focuses on teaching the academic English skills necessary for satisfying Old Dominion University’s English proficiency requirement.

The ELC also provides semester-long Undergraduate and Graduate Bridge courses for students who have been conditionally admitted to the University and who need to improve their English language skills. The ELC administers the institutional TOEFL and SPEAK exams several times a year; a TOEFL preparation course is also available. Admission to ELC programs does not confer admission to other academic programs at Old Dominion University. Visit the ELC website at [www.odu.edu/esl](http://www.odu.edu/esl).

## Visa and Immigration Service Advising (VISA)

The Old Dominion University community includes more than 1,100 international students and 100 visiting scholars from more than 100 foreign countries. Serving the cultural, immigration advising and personal needs of these individuals is the main mission of Visa and Immigration Service Advising (VISA). The office provides administrative support and documentation services along with information and regulatory advising that assist international students and scholars in achieving their academic and research goals. VISA also works closely with academic departments and administrative offices, offering workshops to staff members that help in building awareness of the international community’s needs, as well as to develop and strengthen skills in intercultural communication. Among VISA’S specific offerings are immigration advising and individual assistance with the many cultural aspects of studying in a foreign country. VISA administers the International Student Leadership Award, which provides tuition support for undergraduate international students who demonstrate extraordinary leadership and academic involvement. Visit the VISA website at [www.odu.edu/iss](http://www.odu.edu/iss).

## Parking and Transportation Services

The department of Parking and Transportation Services is responsible for providing quality parking and transportation services throughout campus. A variety of surface parking lots and garages are available throughout campus to students, faculty and staff. All motor vehicles parked in University parking facilities must display a valid parking permit. Students, faculty and staff are required to purchase permits. Permits may be purchased online at [www.odu.edu/parking](http://www.odu.edu/parking) or at the Parking and Transportation Services Office. Visitors and guests may park in metered spaces in garages A and B on 43rd Street and Elkhorn Avenue or the visitor’s parking lot on 49th Street. The Parking and Transportation Services office is located on the corner of 43rd Street and Elkhorn Avenue.

University motor vehicle regulations are enforced year around except as noted in the ODU Motor Vehicle Regulations. Permit regulations are enforced from midnight Sunday until 4:00 p.m. Friday. Evening permits are available for purchase by students attending classes after 3:45 p.m. and are not valid prior to 3:45 p.m.

Parking and Transportation Services has many alternative transportation options for students who do not have a vehicle on campus. ODU shuttle buses take students around the Norfolk campus and to off-campus locations such as Wal-Mart and Kroger. Hampton Roads Transit (HRT) bus passes are available at the Parking and Transportation Services office for the fall and spring semesters for all current students. Zipcars are also located on campus for students 18 years or older to utilize for low hourly or daily rates.

Additional information on rules, regulations, and services may be obtained by calling Old Dominion University Parking and Transportation Services at (757) 683-4004 or by visiting the website at <http://www.odu.edu/parking>.

## Office of Research

Old Dominion University is classified as a Research Institution having high research activity, according to the Carnegie Foundation. In FY 2013, its total research and development (R&D) including institutionally-financed expenditures amounted to \$99.14 million. In an effort to sustain, enhance and grow its research enterprise, Old Dominion’s Office of Research serves the faculty, staff, and students by providing basic research administrative services. The office also provides interface with public and private members of the external community as well as federal and state agencies that have a vested interest in research. The office is led by the Vice President for Research and includes staff members who are able to leverage a breadth of experience and convey quality services related to development of research programs, regional economic development, compliance in the conduct of research, grant writing and development, intellectual property, technology transfer, and governance issues related to sponsored programs. Sponsored research administration services, encompassing the range of pre- and post-award grant and contract administration, in particular, are provided by the ODU Research Foundation.

While most of Old Dominion’s research enterprise centers and entities are housed within specific colleges, the ones that are the most diverse in terms of their research focus and/or scope are configured within the Office of Research. The Virginia Modeling, Analysis, and Simulation Center (VMASC), the Frank Reidy Research Center for Bioelectrics, the Virginia Coastal Energy Research Consortium (VCERC), the Animal Facility and the Orchid Conservatory are five such entities.

VMASC is a multi-disciplinary modeling, simulation and visualization collaborative research center of Old Dominion University. With more than 100 industry, government, and academic partners, VMASC furthers the development and application of modeling, simulation, and visualization as an enterprise decision-making tool and promotes economic development through the transition of intellectual property to the commercial sector. Its core capabilities are: military modeling and simulation (primarily combat simulations), homeland security and homeland defense, medical simulations, social system modeling, transportation, serious gaming, virtual environments, and business and supply chain modeling. VMASC creates computer simulations and conducts program analyses to meet stakeholders’ needs. Computer simulations provide the capability to: quickly and economically test theories and ideas; help visualize and understand complex situations; prioritize labor and capital investment opportunities; and reduce the risk inherent in business decisions. The research interests and capabilities of VMASC include: simulation methodologies, mathematical modeling, simulation inter-operability, verification and validation, distributed simulation, computer visualization, immersive virtual environments, human factors, social behavior, performance analysis, intelligent systems, decision support and collaboration methodologies, and modeling and simulation systems integration.

The Frank Reidy Research Center for Bioelectrics (FRRCB) is internationally recognized as a leader in the understanding of the interaction of electromagnetic fields and ionized gases with biological cells and the application of this knowledge to the development of medical diagnostics, therapeutics, and environmental decontamination. The center is part of an International Consortium for Bioelectrics that includes universities and research institutes from Japan, Germany, France and the United States. The objectives of the center are to perform leading edge interdisciplinary and multi-institutional research, recruit top faculty and exceptional graduate students, support regional, national and international programs, and increase external funding and institutional visibility. Research conducted at the FRRCB has already attracted substantial federal agency support including multiple grants from the National Institutes of Health, Department of Defense and the National Science Foundation. The FRRCB has expertise in pulsed power technology for biological and medical applications in the subnanosecond to the millisecond range and includes the design and modeling of pulse delivery systems. A wide range of research is conducted at the center including new cancer therapies, wound healing, decontamination, imaging and cardiovascular applications. As one of the first institutions to apply this technology in medicine and biology, Old

Dominion University anticipates the potential for proprietary use of the technology with both marketing and licensing opportunities.

The Virginia Coastal Energy Research Consortium (VCERC) is a multidisciplinary research unit charged by the Commonwealth to study and identify alternative solutions to problems arising from over-dependence on fossil fuels that is unsustainable and has become the single biggest threat to our environment, economy, and national security. Virginia, with its vast coastline, natural waterways and abundant sunshine, is ideally suited for a number of alternative energy applications. VCERC seeks out and develops new alternative energy research directions and evaluates viable renewable energy sources for Virginia with an initial focus on offshore winds and the conversion of coastal algal biomass to biofuels. At Old Dominion University, VCERC involves faculty researchers from the Batten College of Engineering and Technology and the College of Sciences, and is structured to operate in partnership with a number of Virginia institutions: Virginia Tech – Alexandria Research Institute, Virginia Institute of Marine Science, Norfolk State University, James Madison University, Virginia Commonwealth University, University of Virginia, and Hampton University. This statewide, inter-university network seeks to become a leader in the research and development of numerous alternative energy projects that are of direct benefit to local employment, manufacturing groups, state institutions, the students and staff of Virginia universities, and the public.

## Research and Enterprise Centers

The University has established a number of research and enterprise centers. Please check the web pages of the Office of Research [www.odu.edu/research](http://www.odu.edu/research) and those of the individual colleges for information regarding centers in specific areas.

## Research Policies

Students who receive compensation through sponsored research, tuition/fee waivers, scholarships, assistantships, or other financial arrangements are covered by Old Dominion University's Policy on Intellectual Property. This policy covers the ownership and use of copyrighted works, inventions, and any other form of intellectual property. In those cases where the University has a vested interest in intellectual property, the policy specifies how any revenues derived will be distributed between the inventor/author and the University. The policy can be found in its entirety at <http://www.odu.edu/content/dam/odu/offices/bov/policies/1400/bov1424.pdf>.

Students engaged in scientific research or other scholarly activity at Old Dominion University should also be aware of the University's Policy, Procedures and Timeline for Responding to Allegations of Misconduct in Scientific Research and Scholarly Activity. The policy can be found in its entirety in the Board of Visitors manual section on Research Policies at <http://www.odu.edu/about/policiesandprocedures/bov>.

## Research Foundation

The Old Dominion University Research Foundation is a separate, private, not-for-profit corporation chartered under the laws of the Commonwealth of Virginia in 1965. The foundation serves as the fiscal and administrative agent to manage research and sponsored programs and aid in technology commercialization for Old Dominion University. The foundation's purpose is to promote the education, research and public service objectives of Old Dominion University by encouraging, advancing, fostering, and conducting research and sponsored programs in engineering, the physical and life sciences, the humanities, education, and all other branches of learning.

The foundation is the contracting agent for University research grants and contracts with external funding agencies. In fiscal year 2013, the Research Foundation received \$116 million in awards for research and sponsored programs. Research and sponsored program activity for fiscal year 2013, measured by amount of expenditures, totaled \$74 million for projects sponsored by federal, state, and local government agencies and a variety of corporations and private foundations.

Technical direction of a sponsored program remains the responsibility of the principal investigator. The foundation supports the University and assists investigators by providing a broad range of administrative and technical support services. Among these services are: financial administration, budget

preparation and monitoring, financial compliance guidance, proposal preparation and submission assistance, project payroll and human resources, financial reporting, technical reporting support, intellectual property administration, procurement and equipment inventory control.

## Ted Constant Convocation Center

The Ted Constant Convocation Center, which opened in October 2002, is a 9,100-seat multi-purpose arena located on the campus of Old Dominion University. It is known as one of the premier mid-sized collegiate venues in the country. The Constant Center is the cornerstone in the University Village project, a 75-acre development that also features restaurants, shopping, offices, research labs and residences with high-tech connections to the campus. It is also home to the Old Dominion Monarch and Lady Monarch basketball teams, and plays host to ODU Wrestling matches, a variety of family-oriented events as well as concerts, ODU commencement, career fairs, and lectures.

"The Ted" has 7,319 (fixed) fully cushioned seats, 862 upper club/priority seats, 16 luxury suites, and a state-of-the-art scoreboard. The arena currently seats 8,639 for basketball games. The Constant Center has recently been equipped with more than 50 high-definition flat screen televisions, premiere interactive suite controls, state-of-the-art sound and lighting, impressive meeting room technology, and substantial back-of-house amenities.

The Ted Constant Convocation Center is managed by Global Spectrum, an international facility management company based out of Philadelphia.

## University Card Center

All students who are officially registered for one or more credit hours in the current semester at Old Dominion University are eligible to receive a free student ID card. Student ID cards are issued at the University Card Center located in Room 1056 Webb Center. If the ID card is lost or stolen, there is a replacement fee. Spouses and dependents of students are not eligible to receive an ID card.

The University ID card is an official form of identification. The ID card lists the bearer's first name, last name and middle initial, University identification number (UIN) and status with the University. Each student can possess only one valid ODU ID card at a time. The ID card must be carried at all times when at Old Dominion University and presented upon request to University officials. Any misuse of the University ID card will result in disciplinary actions.

Not only is the University ID card an official form of identification, it also serves many other functions. Students can use their card to check out books from the library, participate in University events, obtain HRT bus passes, access their residence hall, use their meal plan, and make purchases from their Monarch Plus account. Monarch Plus can be used at on-campus locations and participating merchants off campus. For more information, visit the website at [www.odu.edu/cardcenter](http://www.odu.edu/cardcenter), email [cardcenter@odu.edu](mailto:cardcenter@odu.edu), or call 757-683-3508.

## University Libraries

The University Libraries include the Patricia W. and J. Douglas Perry Library, the Elise N. Hofheimer Art Library, and the F. Ludwig Diehn Composers Room. Each provides books, online journals, e-books, microforms, maps, musical scores, recordings, and other media in all fields of research and instruction. Library staff provide instruction and information services. Students can also find study space, wireless access, workstations, and equipment loans. Available online at [www.lib.odu.edu](http://www.lib.odu.edu) are the library's catalog, scholarly journals and research databases via University and statewide Virtual Library of Virginia (VIVA) subscriptions. The University Libraries serve as a repository for U.S. and Virginia government publications in print and online formats. Through the Virginia Tidewater Consortium and VIVA, students and faculty may also borrow materials from participating academic libraries in Virginia.

## The Elise N. Hofheimer Art Library

Barry Arts Building, Room 2008, 47th Street and Monarch Way, 683-4059. The Library contains specialized books, journals, online resources, audio-

visual titles and other materials for students and faculty in the visual arts. Reserve materials for Art Department classes are available at the service desk. Individual and group study space, computers, viewing monitors, a scanner and a network printer/copier are available. Visit the Art Library at [www.lib.odu.edu/hofheimer/index.htm](http://www.lib.odu.edu/hofheimer/index.htm).

## The Diehn Composers Room

Diehn Fine and Performing Arts Center, Room 189; 683-4173. The F. Ludwig Diehn Composers Room houses music special collections, scores, music videos, sound recordings, and audio equipment. MIDI, multi-media, DVD, VCR, laser disc player stations, computers, scanner, and network printer/copier are available. Reserve materials for Music Department classes are available at the service desk. The Reading Room offers space for the study of manuscripts, scores, audio recordings, and other materials from the archival research collections. A Steinway grand piano affords scholars and researchers the opportunity to play selections from the composers collections as desired. Visit the Diehn Composers Room at [www.lib.odu.edu/diehn/index.htm](http://www.lib.odu.edu/diehn/index.htm).

## Perry Library

Perry Library offers many services and resources:

### Learning Commons

1st Floor, 683-4178. The Learning Commons @ Perry Library is a collaborative project of the University Libraries, Information Technology Services, and the Student Success Center, providing year-round services with extended 24/5 hours during fall and spring semesters. The facility includes individual study space, as well as group collaboration, presentation practice, and sound rooms that can be reserved by students. Services include research assistance and resources, technology assistance, tutoring and writing centers, peer-to-peer tutoring, and other services supporting student success. Computers, wireless access, printers, scanners, copiers, GIS/digital media/other specialized software, and equipment loans are available. Information and reservations are available at <http://www.odu.edu/learningcommons>.

### Circulation and Reserve Services

2nd Floor, 683-4154. Students with a valid University ID may borrow and renew books and other materials, as well as check out reserve materials. Graduate student study carrels are also available. Information on borrowing privileges, loan periods, and policies is available at [www.lib.odu.edu/libraryservices/borrowing.htm](http://www.lib.odu.edu/libraryservices/borrowing.htm).

### Interlibrary Loan and Document Delivery Services

Room 1208, 683-4170, 4171. Interlibrary loan allows ODU students, faculty and staff to request journal articles, books, and other needed research materials not available in the University Libraries. The state's VIVA interlibrary loan agreement ensures that students, faculty and staff may obtain items located in other Virginia libraries. Document delivery services provide copies of materials held in the University Libraries' collection to distance learners and other eligible students, faculty and staff. Interlibrary loan and document delivery requests can be submitted online through ILLiad, at [www.lib.odu.edu/libraryservices/interlibraryloan.htm](http://www.lib.odu.edu/libraryservices/interlibraryloan.htm).

### Accessibility Services

1st Floor, 683-4178. The Library Accessibility Room (Room 1309) in the Learning Commons provides specialized equipment and quiet space for students registered with the University's Office of Educational Accessibility (<http://www.odu.edu/educationalaccessibility>). Wheelchair accessible, the room can be reserved for individual use once an orientation program has been completed. The facility houses CCTV, workstations with ZoomText and JAWS, and other adaptive technologies. Quiet space is also available through the reservable study rooms on the upper floors of Perry Library. Orientation, reservations, and research consultation appointments are available through the Learning Commons Help Desk. The 2nd floor Circulation Services desk provides on-demand paging to students who need special assistance with retrieving materials from the upper floors. Information about accessibility is available on the University Libraries' web site at [www.lib.odu.edu/libraryservices/accessibilityservices.htm](http://www.lib.odu.edu/libraryservices/accessibilityservices.htm).

## Reference and Research Services

1st Floor, 683-4178. At the Learning Commons Help Desk, Reference and Research Services staff assist students and faculty in locating information, library research and technology use. Specialized staff provide direct individual assistance and consultation by appointment, telephone, e-mail and live online chat. While most scholarly journals and databases are available through online subscriptions, the University Libraries also houses circulating and reference print collections, including government publications. Distance learning students may obtain assistance by calling the Help Desk or linking to *Ask A Librarian* at <http://www.lib.odu.edu/contact/index.htm>.

### User Instruction

Reference and Research Services staff offer information literacy classes, research classes, specialized workshops, and orientation sessions to assist graduate and undergraduate students with library research. Tutorials, online research guides, schedules of library workshops, and additional information on instruction services are located at [www.lib.odu.edu/researchassistance/libraryclasses.htm](http://www.lib.odu.edu/researchassistance/libraryclasses.htm).

### Special Collections & University Archives

Room 3023, 683-4483. Special Collections & University Archives houses manuscripts, books and printed material relating to University, Virginia and Tidewater history. The University Archives includes theses and dissertations, oral histories, yearbooks, course catalogs, University publications, and photographs of yesterday and today. Special Collections contains diaries, letters, legal and campaign files, photographs, and maps from the Civil War, Virginia politics, military history, African-American history, Norfolk urban redevelopment, women's history, and local history. Visit Special Collections at [www.lib.odu.edu/specialcollections/](http://www.lib.odu.edu/specialcollections/).

## University Village Bookstore

The University Village Bookstore is the official on-campus bookstore of Old Dominion University – offering products and services to students, faculty and the surrounding community both in-store and online via [shopodu.com](http://www.shopodu.com) (<http://www.shopodu.com>). The University Village Bookstore houses 20,000 titles providing the most options to the campus community. The primary purpose is to serve the students of the University by making books and supplies available for courses.

Additionally, the bookstore serves the campus community by maintaining a wide selection of computer products, alumni apparel, ODU football and basketball gear, gifts, and accessories. Furthermore, the bookstore provides faculty services, a robust used books program, Rent-A-Text, and a growing CafeScribe digital library. The bookstore also hosts events that include book signings and children's events. Store partners include eBooks, Greek apparel, Software Shop, and Starbucks.

The bookstore is located at 4417 Monarch Way and is open Monday-Friday, 8:00 a.m. to 7:00 p.m., Saturday 10:00 a.m. to 5:00 p.m. and Sunday 12:00 noon to 5:00 p.m. For additional information, please call 757-683-0048.

## Webb University Center

Opened in May 1966, Webb University Center was named after the University's first president, Lewis W. Webb, who served the University from 1962 until 1969. Webb Center is the community center for all members of the University family--students, faculty, staff, administration, alumni, and guests. The Center provides services, conveniences, and amenities that members of the University family need in their daily lives on campus. It also provides a place for getting to know and understand one another outside the classroom.

Webb University Center's staff are dedicated to providing a friendly and attractive environment in which campus constituents can be brought together to build campus community. The staff provide services and maintain the facility in support of student learning and development through student activities, programs, meetings, and special events.

# Admission to Old Dominion University

## Office of Admissions

The mission of the Office of Undergraduate Admissions is to recruit, admit and enroll students from throughout the United States and abroad who will contribute to the overall collegiate experience. Old Dominion University is open to all qualified students regardless of race, color, religion, sex (including pregnancy), age, national origin, veteran status, disability, political affiliation, sexual orientation, gender identity, or genetic information. All students submitting an application for admission must certify the content is true and correct. Applicants also agree to abide by and support the rules, regulations and Honor Code of Old Dominion University. Please refer to the Office of Undergraduate Admissions web site for deadlines.

## Undergraduate Admission

### Freshmen Admission

Traditional freshman applicants are typically under the age of 21 and currently enrolled in high school or have graduated from high school within the past two years and have not attended any regionally accredited college or university (not to include dual enrollment).

Admission to the University does not imply admission to a specific degree program. The following programs require a secondary admission process once the student has been admitted to the University:

- Cytotechnology
- Dental Hygiene
- Environmental Health
- Medical Technology
- Nuclear Medicine Technology
- Nursing
- Ophthalmic Technology

Please contact the department directly for secondary admission information.

### Requirements

The Office of Admissions considers the following factors during the application review process.

### Academic Preparation

The University encourages students to participate in a college preparatory program of study. Preference is given to students enrolled in Advanced Placement (AP) or International Baccalaureate (IB), honors and college-level dual-enrollment courses.

The most qualified applicants' high school curriculum includes course work in the following areas:

- English - 4 units
- Social Sciences - 3 units (World History, United States History and United States Government)
- Mathematics - 3 units (Algebra, Geometry, Algebra II)
- Sciences - 3 units of laboratory sciences
- Foreign Language - 3 years of one foreign language or two years of two foreign languages

Note: College of Engineering and Technology Intended majors: Students who have taken advanced courses, particularly in math, chemistry and physics, are best prepared for the academic rigor of the Batten College of Engineering and Technology and are more competitive in the admissions process. Students are encouraged to complete four units of mathematics that include one unit of higher-level math courses such as trigonometry, analysis, or calculus. Science units should include one unit of chemistry, one unit of

physics, and one unit in another area of science, such as general science, physical science, environmental science, and anatomy and physiology.

### Academic Criteria

The weighted cumulative high school grade point average (HS GPA) and performance on the Scholastic Assessment Test I (SAT) or the American College Testing (ACT) Program are primary considerations during the application review. Applicants should consult <http://sat.collegeboard.org/home> or <http://www.act.org/> for test registration procedures. Freshman applicants who have earned a minimum 3.3 HS GPA (weighted cumulative GPA on a 4.0 scale) may choose whether or not to submit standardized test scores. Applicants choosing to exclude test scores should provide evidence of a challenging academic curriculum that predicts future college success and possess demonstrated leadership in extracurricular, work, or service experiences. Applying test-optional does not guarantee admission. Applicants desiring full scholarship consideration must submit test scores even if applying for admission under the test optional program.

### Additional Credentials

Applicants may submit a resume, essay, and/or letters of recommendation as part of their application materials. These additional credentials, combined with the academic qualifications, provide the Office of Undergraduate Admissions with a comprehensive profile of an applicant's potential for academic success and ability to contribute to the academic community. Students with unique talents and abilities in art, music, leadership, and other endeavors should provide such information.

### Gifted High School Students

Gifted high school students with exceptional academic abilities may take classes before completing the full program of high school studies. Students must submit scores from the SAT and/or ACT along with their high school transcript. Additionally, a letter must be submitted from the high school principal supporting the student's request for early enrollment into college-level courses.

### Freshmen Early Action Admission

Freshman applicants who submit the application for admission, fee and all credentials by the early action deadline will be notified of an admission decision by mid-January. Early action decisions are non-binding. Please refer to the Office of Admissions web site for deadlines.

### Freshmen Regular Admission

Freshman applicants who submit the application for admission, fee and all credentials by the regular admission application deadline will be notified of an admission decision by mid-March.

### Non-Traditional Freshmen

Non-traditional freshman applicants are typically over the age of 21 and graduated from high school or received a General Education Development (GED) Certificate more than two-years ago. Additionally, they have not enrolled in any regionally accredited college or university (excluding dual enrollment). Non-traditional freshman applicants must submit the application, fee and an official high school transcript or GED transcript. If the applicant has graduated from high school or received the GED certificate within the past three years, official SAT or ACT standardized test scores are required. The submission of a resume and statement of goals is strongly encouraged.

### Freshmen Guaranteed Entry and Accelerated Bachelor's/Master's Programs

High-ability freshmen may be guaranteed entry into professional and graduate school in a number of areas.

In the College of Health Sciences, physical therapy, nursing and dental hygiene programs offer this option for freshmen. Accelerated bachelor's/master's programs are also available in environmental health/public health, health sciences/public health, and dental hygiene.

The B.S./M.D. (guaranteed admission to medical school) is available through the College of Sciences. The B.S./M.D. program allows students to begin professional school after three years. In addition, the College of Sciences offers an accelerated bachelor/master program in computer science.

A B.S./M.D. program is available for students pursuing undergraduate engineering degrees. The Batten College of Engineering and Technology also offers accelerated bachelor/master and bachelor/Ph.D. programs.

In the Darden College of Education, freshman guaranteed entry is available in special education.

An accelerated B.S.B.A./M.B.A. is available for all undergraduate majors in the Strome College of Business.

A five-year B.A. or B.S./M.B.A. allows students to combine a Bachelor of Arts or Bachelor of Science with excellent preparation for a career in the business world. These programs are available in the College of Arts and Letters, Business (economics) and Sciences. In addition, the following accelerated bachelor/master programs are available in the College of Arts and Letters:

- Applied linguistics/English
- Communication/humanities
- Communication/lifespan and digital communication
- English
- History
- Interdisciplinary studies/ humanities
- International studies
- Philosophy/humanities
- Women's studies/humanities

Information on guaranteed entry and accelerated bachelor/master programs may be obtained on the University's web site or by contacting the individual programs or departments.

## **Advanced Placement, International Baccalaureate and A/AS Level Credit**

Old Dominion University recognizes the rigor and challenge of the Advanced Placement (AP), International Baccalaureate (IB) and Cambridge Advanced (A/AS Level) programs. Credit may also be awarded for A/AS Level Examinations from examining boards other than the Cambridge Advanced Program. Advanced standing credit is awarded to students who earn qualifying scores on AP, IB and Cambridge Advanced (A/AS Level) subject examinations. (See AP and IB equivalency charts, Office of Undergraduate Admissions website: <http://www.odu.edu/admission>) For further information on credit awarded for A/AS Level Examinations, contact the Office of Undergraduate Admissions.

Most credits awarded for AP, IB and Cambridge Advanced (A/AS Level) examinations satisfy individual course requirements in ODU's General Education curriculum. Course credit will not be awarded until final and official examination scores are received. Students must request that their official exam results be sent to the Old Dominion University Office of Undergraduate Admissions.

-Approved by the Board of Visitors

## **Transfer Admission**

Transfer applicants have attended a regionally accredited college or university after graduating from high school or receiving a GED.

Some academic programs require a secondary admission review. Students should contact the academic department for information regarding additional application requirements.

Applicants must submit official transcripts from all previously attended institutions (including post-secondary institutions outside of the U.S.) regardless of whether or not the transfer credit will apply toward an Old Dominion University degree. It is understood that all information stated on the application is truthful. Deliberate falsification of application information will result in immediate withdrawal and a potential forfeiture of credits. By

submitting an application, applicants agree to abide by and support the rules, regulations and Honor Code of Old Dominion University.

## **Guaranteed Admission**

Old Dominion University guarantees admission to an applicant who graduates with a transfer-oriented degree program or an articulated applied associate degree program at a Virginia community college with a cumulative grade point average (GPA) of 2.5 or higher on a four-point scale. Submission of the Letter of Intent to Transfer is required for eligibility under this guaranteed admission program. Graduates of an articulated applied associate degree program must have met all degree/course requirements outlined in the specific curriculum articulation agreement.

Some degree programs at Old Dominion University require a secondary admission process; thus, guaranteed admission into Old Dominion University does not imply admission to these specific degree programs. Applicants admitted to Old Dominion University via the Letter of Intent should contact the department directly for information regarding secondary admission requirements.

## **Academic Criteria**

The Office of Undergraduate Admissions will consider the cumulative grade point average and the grade point average (based on a four-point scale) of the most recent 24 credit hours. Performance on the Scholastic Assessment Test I (SAT) or American College Testing (ACT) Program will be required if the applicant has completed fewer than 24 semester hours of academic work at a regionally accredited college or university.

## **Additional Credentials**

Other items taken into consideration during the review process are letters of recommendation, resume and essay. These additional credentials provide a comprehensive profile of an applicant's potential for academic success and individual ability to contribute to the academic community.

## **Transfer Early Action Admission**

Transfer applicants who submit the application, fee, all official transcripts from any previously attended institution, and all other credentials by the early action deadline will be notified of their admission decision by mid-April. Early action decisions are non-binding.

Students who apply by the early action deadline are reviewed for scholarship eligibility. Please refer to the Office of Undergraduate Admissions web site for deadlines.

## **Transfer Regular Admission**

Transfer applicants must submit the application, fee, all official transcripts from any previously attended institution, and all other credentials by the appropriate deadline. All applicants who have completed the application process will receive notification on a rolling basis. Once a student has been admitted, a transfer credit evaluation will be available at [https://www.leonline.odu.edu/plsql/web/twbkwbis.P\\_GenMenu?name=homepage](https://www.leonline.odu.edu/plsql/web/twbkwbis.P_GenMenu?name=homepage). Admitted transfer applicants who do not attend the University within one year of their admitted term must re-apply.

## **Second Baccalaureate Degree Admission**

Second baccalaureate degree applicants have earned a bachelor's degree from a regionally accredited college or university and wish to pursue an additional bachelor's degree in a different course of study. Second baccalaureate degree applicants must submit the application form, fee, all official transcripts from any previously attended institution, and all other credentials by the appropriate deadline for their intended term of entry. All applicants who have completed the application process will receive notification on a rolling basis. Please refer to the Office of Undergraduate Admissions web site for the application form and deadlines. Second baccalaureate degree students who do not attend the University within one year of their admitted term must re-apply by submitting a new application, fee and updated credentials.

## Transfer of Credit

Transfer credits must be taken at regionally accredited institutions such as those accredited by the Southern Association of Colleges and Schools Commission on Colleges. A grade of C (2.00) or above must be earned in the course and must be appropriate to Old Dominion University's degree program. In general, all liberal arts credits and professional and technical courses parallel to those of Old Dominion University are transferable.

Graduate credit will not be accepted for undergraduate degree requirements.

## Transfer Policies for General Education Requirements

1. Students wishing to transfer academic credits into Old Dominion University to satisfy the General Education Requirements must apply individual transfer courses to the academic skills, Ways of Knowing and upper-division categories as listed in this catalog. Students must submit transcripts to the Office of Undergraduate Admissions for evaluation. Decisions regarding the equivalency of transfer courses to satisfy General Education Requirements will rest with the chair of the academic department responsible for the subject matter involved. Students should be aware that even though University General Education Requirements might be met through transfer courses, departmental and college requirements must still be met.
2. With regard to the fulfillment of General Education Requirements, students will be able to apply transfer credit on a course-by-course basis rather than hour-by-hour as long as the course is determined to be commensurate with content categories of the curriculum used to fulfill General Education Requirements at Old Dominion University. Questions regarding such equivalency will be directed to the chair of the academic department responsible for the subject. Any such course transfer will carry the number of academic credits assigned by the institution where the credits were earned. In the case of quarter system credits, the standard conversion of quarter hours to semester hours (3:2) will be used.
3. Students who have received an A.A., A.S., or A.A.&S. from Richard Bland College or the Virginia Community College System (including the A.A.&S. degree in general studies) have met all General Education requirements except those specified as major or college requirements, requirements for completion of the Undergraduate Writing Program, and the upper-division requirement that is met through completion of one of the following: a second degree or major; a minor; regional and business courses; an approved certification program such as teaching licensure; or upper-division coursework.

Applicants who have received the A.S. degree in general studies offered by institutions whose general studies degrees are recognized as transfer degrees by the State Council of Higher Education for Virginia will be guaranteed acceptance as meeting lower-division General Education Requirements. A.S. degrees in general studies received from institutions whose general studies degrees are not recognized by the State Council of Higher Education for Virginia will be examined individually to determine whether they are university parallel and eligible for lower-division General Education requirement waivers.

Students who have earned an Associate in Applied Science (A.A.S.) degree from the Virginia Community College System in specific articulated programs that include the required General Education courses have met all General Education requirements except the requirements for completion of the Undergraduate Writing Program and the upper-level requirements.

Associate degrees awarded outside the Virginia Community College System are examined individually to determine whether they are university parallel programs (consistent with the requirements of degrees from the Virginia Community College System) and eligible for lower-division General Education requirement waivers.

Students who transfer into the University from a campus of the Virginia Community College System without having completed the A.A., A.S., or A.A.&S. degree may receive credit for General Education courses, even if these courses are not full equivalents of Old Dominion University courses. Similarly, the University evaluates transcripts

of all transfer students from regionally accredited two- or four-year institutions at the time of the matriculation and assigns appropriate transfer credit for General Education courses judged as compatible with corresponding Old Dominion University General Education courses. Students must earn a grade of C (2.0) or better in order to receive the credit hours associated with classes taken at other regionally accredited institutions.

Substitutions for General Education Requirements can be made only by the dean of the college offering the General Education skill or Ways of Knowing area.

4. Students earning high school diplomas before December 31, 1985 will be exempted from the General Education foreign language requirement as part of the skills area of General Education at Old Dominion University. This does not waive departmental or major requirements.
5. Students who have earned a baccalaureate degree at another regionally accredited institution and who wish to acquire a second baccalaureate degree from Old Dominion University will be considered to have fulfilled the lower-division writing requirement and University General Education Requirements with the exception of the writing intensive (W) course in the major; such students must complete the writing intensive course in the major at Old Dominion University and must earn a grade of C (2.0) or better. Second degree students will be expected to meet all college, school and departmental requirements as well as complete a minimum of 30 semester hours at Old Dominion University for a second degree.

**Special Transfer Credit Policies.** Transfer students admitted to the Department of Art must submit a portfolio for evaluation by the faculty to determine the number of art credits that will be accepted from previous study. Information on portfolio requirements may be obtained from the chair of the department. For more information, refer to the Department of Art section of this catalog.

Transfer students interested in music must have an audition to determine placement and number of credits transferable from previous study. Information on the audition may be obtained from the chair of the department. For more information, refer to the Department of Music section of this catalog.

**Military Service and Experiential Learning Credit.** Old Dominion University recognizes the specialized training and skills of our military service members. Credit may be awarded for various types of military experiences and other experiential learning skills. Information concerning the evaluation of military credit and prior learning assessment is available on the Office of Undergraduate Admissions website at <http://www.odu.edu/admission>.

**Evaluation of Transfer Credit.** Subsequent to notification of admission, a formal evaluation of credit is completed by the Office of Undergraduate Admissions. Transfer credits may be awarded for specified equivalent courses, electives within a discipline or free electives.

## Appeals of Transfer Credit Evaluations

Students who wish to appeal their transfer credit evaluation may consult with the Office of Undergraduate Admissions or the academic department relevant to the course in question. Course descriptions and/or syllabi are required for departmental review. Once a course equivalency is approved, the department will request the Office of Undergraduate Admissions to update the student's record.

## Students with Foreign Credentials

U.S. Citizens and Permanent Residents who have attended high school (secondary) and/or post-secondary (college or university) institutions outside the United States must submit official credentials to the Office of Undergraduate Admissions. Official transcripts are delivered in a sealed envelope bearing the official seal and signatures of the issuing institution. Transcripts should be sent directly from the previous institution to Old Dominion University. All transcripts that are not issued in English must be supplemented with a literal (word-for-word) translation. These translations should be official and stamped by a school official or certified by an

acceptable translation service. For a list of acceptable translation companies, please visit the Office of Undergraduate Admissions website. Notarized copies are not considered official documents. Old Dominion University will not accept unattested photocopies or documents verified by a local notary public. All submitted documents become property of Old Dominion University and will not be returned. Old Dominion University conducts in-house evaluations of foreign credentials. Evaluations completed by a credential evaluation service or agency (AACRAO, WES, ECE, etc.) will serve as an English translation only.

## Nondegree Admission

Nondegree entry is available to applicants who do not choose to apply for admission to a degree program but wish to enroll in course work at Old Dominion University. Federal financial aid is not available for nondegree students, except for those in approved teacher certification programs. The option of nondegree admission is available for the following conditions:

- Visiting students – those taking course work at Old Dominion University with the intention of transferring the course credit to their home degree-granting institution.
- Certificate program students – individuals expanding their academic background or seeking teacher certification. For information related to registering for a certificate program, please contact the academic department directly. Financial aid is not available for nondegree students, except those in approved teacher certification programs.
- Adult learners – students taking courses for personal and/or academic growth.
- Senior scholars – high school students taking college-level courses (permission is needed from the high school guidance counselor and parent/or legal guardian).

### Additional Information

- All students taking prerequisites (undergraduate, second degree or graduate) for a degree-seeking program should seek the approval of the academic department before registering for course work as a nondegree student. Financial aid is not available for nondegree students, except those in approved teacher certification programs.
- Students under suspension from Old Dominion University or another college or university are not eligible to attend Old Dominion University.
- All applicants who were denied admission to Old Dominion University are not eligible for nondegree admission without a change from the original application type (i.e. attended a community college or became non-traditional by definition).
- Academic advisors are not assigned to nondegree-seeking students, but students are strongly encouraged to contact their academic department of interest prior to registering for courses.
- Undergraduate students are advised to take no more than 24 semester hours as nondegree students.
- All students, degree and nondegree alike, must meet the continuance requirements as stated in the current Undergraduate Catalog. Failure to meet these requirements will subject students to probation or suspension.
- Non-native speakers of English must provide evidence of English language proficiency.

## Nondegree Admission Procedures

Nondegree applicants must submit the fee, along with the nondegree application form found on the Office of Undergraduate Admissions web page at [www.odu.edu/admissions](http://www.odu.edu/admissions). For the student's convenience, official credentials may not be required at the time of registration; however, unofficial records or a personal interview may be requested for admission purposes. It is understood that all student information stated on the application is truthful. Deliberate falsification of application information will result in immediate withdrawal and a potential forfeiture of credits. By submitting an application, applicants agree to abide by and support the rules, regulations and Honor Code of Old Dominion University.

Nondegree students who do not attend the University within one semester of their admitted term must re-apply by submitting a new nondegree application and fee.

## Admission Reactivation

Continuing applicants are students who previously attended Old Dominion University on a degree-seeking basis and left the University. A student who has left the University in good academic standing for more than a year is required to complete a reactivation/readmission form available on the Office of Undergraduate Admissions web site.

If the separation from the University was longer than five years, the applicant will need to resubmit all official transcripts and other required credentials.

The deadlines to apply for admission reactivation are as follows:

- Fall semester – second Friday in August
- Spring semester – second Friday in December
- Summer semester – second Friday in April

Reactivation forms submitted after the deadline will not be considered. Students must resubmit the reactivation form and required credentials by the next deadline.

Students who are returning from academic suspension must participate in the Academic Continuance Experience for Success (ACES) program prior to the start of classes for the returning semester. Failure to participate will result in a deferment of admission until the next semester, at which time the ACES program must be completed. More information about readmission from suspension can be found at <http://www.odu.edu/academics/academic-records/grades/academic-performance/reinstatement> or by contacting the Office of Advising and Transfer Programs in Academic Enhancement (also see Undergraduate Continuance Regulations and Adjusted Resident Credit information in this Catalog).

## Graduate Admission

Refer to the Graduate Catalog.

## English Proficiency Requirements for Non-Native Speakers of English

Admission to all levels of University study is contingent upon successful completion of English language proficiency requirements. Non-native speakers of English can provide evidence of English language proficiency through a variety of options. Please note that Bridge Program students must satisfy English proficiency requirements within twelve months of their enrollment in the program. Admission to the on-campus English Language Center (ELC) and subsequent enrollment in English language courses at the center does not imply admission to the University. Further information for non-native speakers of English is available from the Office of Admissions (permanent residents and naturalized citizens) and from the Office of International Admissions (all non-immigrants).

Fulfillment of any one of the following will satisfy English language proficiency requirements for admission to Old Dominion University:

1. Submission of one of the following English proficiency test scores: TOEFL of 79 (550 paper based); IELTS overall band of 6.5; SAT Critical Reading of 480; GRE Verbal Reasoning of 152; GCSE or GCE "O" level pass in English language; CPE grade of A, B, or C.
2. Possession of a bachelor's or master's degree equivalent from an accredited institution located in a country where English is the native language.
3. Successful completion of two university- or college-level English courses at a regionally accredited U.S. institution. Successful completion is defined as obtaining a minimum grade of C (2.00) in each of these courses. These courses must be equivalent to the University's English composition course(s) (see General Education Requirements, Lower-Division Written Communication section) and any other advanced composition or technical writing course. In addition,

matriculated Old Dominion University/English Language Center students must receive prior approval from the Office of International Admissions to take English composition courses at another institution for the purpose of satisfying the English Proficiency Requirement.

4. Successful completion of two semesters in Old Dominion University's Undergraduate Bridge Program. Successful completion is defined as satisfying the following two criteria:
  - a. Securing a minimum grade of B and demonstrating 85% attendance in each English Language Center class for two semesters; and
  - b. Securing a minimum grade point average of 2.50 in academic courses taken during the Bridge Program.

Students whose TOEFL test score falls between 61-78 (500-550 paper based) will be placed in the comprehensive Undergraduate Bridge Program, which includes both academic and semi-intensive English Language Center course work. Students with a TOEFL score below 61 (500 paper based) are automatically enrolled for full-time, intensive English language instruction at the on-campus English Language Center.

Students whose native language is not English and who have satisfied English language proficiency requirements through one of the avenues detailed above are exempt from fulfilling the foreign language requirement for general education. Students pursuing degrees that require proficiency beyond the 100 level must be certified by the Department of Foreign Languages and Literatures to obtain a waiver of the 200-400 level courses.

Transfer credit is not granted for English composition classes taken at an institution located in a non-native English-speaking country. Exceptions to this policy may be made in instances in which the University has entered a formal agreement with an overseas institution.

All undergraduate students take a University writing exam (Writing Sample Placement Test) to determine proficiency in writing. In addition, all undergraduate students must earn a grade of C or better in ENGL 110C, ENGL 211C or ENGL 221C or ENGL 231C, and the writing intensive (W) course in the major in order to graduate.

## International Student Admission

International students should apply only through the Office of International Admissions. U.S. Permanent Residents and Green Card holders should apply only through the Office of Admissions. The primary method of application is web-based; however, a paper application is available upon request. Along with the application and fee, officially issued academic records (transcripts) and evidence of English language proficiency are required. As a service to applicants, the Office of International Admissions evaluates all foreign academic credentials.

### Application Process and Dates

Applicants must strictly adhere to international admission and specific program deadlines to allow for the evaluation of academic and financial credentials. Additional timeline considerations include the student visa application process and required attendance at various orientation programs conducted during the week prior to the beginning of classes. Admission deferments are granted for up to one calendar year (two semesters); beyond this allotted time, a new application, fee and academic credentials are required. Along with the application and fee, all academic transcripts, translations and standardized tests must be official, sealed, stamped by the institution or testing agency and sent directly to the Office of International Admissions at Old Dominion University (CEEB code 005126). Officiating authorities include an institution's Registrar or Principle/Controller of Exams. When English is not the language of instruction, academic transcripts and course descriptions are required in one's native language and officially translated into English. Photocopies, notarized copies, or faxed copies of required official documents will not be accepted. Certified translations by a licensed or professional translator must accompany academic documents not written in English. Translations of official documents completed by the student will not be accepted. Credentials submitted during the application process become the property of Old Dominion University and cannot be returned.

### Transfer of Undergraduate Course Credit

The determination of the equivalency and number of undergraduate transfer credits to be awarded for post-secondary work completed at a foreign institution is based on grades, credit value assigned per course (or number of hours per week spent in class) and the duration (in weeks) per course. All transfer credit policies listed in the Transfer Admission section of this catalog are parallel and apply to the transfer of credit from non-U.S. institutions. It is the responsibility of the student to provide this information to the Office of International Admissions. Course descriptions or syllabi must be officially translated into English. The Office of International Admissions may provide the transfer credit evaluation upon admission.; however, the final evaluation may be determined by the academic department upon the student's enrollment.

### F-1 & J-1 Student Visas

Students seeking an F-1 or J-1 non-immigrant student visa must demonstrate to both Old Dominion University and the U.S. consulate the financial ability to cover all expenses related to study and living in the U.S. Funding requirements include tuition, health insurance, living and personal expenses for the first year of study, in addition to a reasonable expectation of funding for the remaining years of study. Old Dominion University issues forms I-20 (F-1) or DS-2019 (J-1) for the nine-month academic year with the submission of Old Dominion University's Financial Affidavit of Support, along with any corresponding original, bank issued financial statements or financial sponsorship guarantees.



# Tuition, Fees & Financial Information

## Tuition

As used by the University, the term tuition refers to a comprehensive fee that includes payment of instructional programs, academic services, student services and activities, recreational sports, and intercollegiate athletics. All fees are subject to approval and/or change by the Board of Visitors.

Information related to the comprehensive tuition can be found on the website for the Office of Finance at <http://www.odu.edu/admission/costs-tuition/tuition/tuition-rates>

Students who are eligible to enroll in a combination of undergraduate and graduate courses in any given semester must pay tuition for the courses at the appropriate levels as prescribed. Graduate hours are available at graduate tuition rates, and undergraduate rates apply for undergraduate hours.

## Housing Charges—2014-15 Academic Year\*

Housing Charges	2014-15 Academic Year
Average room and board per year	\$9,268.00

## Applied Music Fees—2014-15 Academic Year\*

Applied Music Fees	2014-15 Academic Year
Individual Instruction (2 or 3 credits, one hour of instruction)	\$250.00
Individual Instruction (1 credit, one-half hour of instruction)	\$175.00
Group Instruction (class piano or voice)	\$75.00

## Laboratory Fees—2014-15 Academic Year\*

Laboratory Fees	2014-15 Academic Year
ARTS 202, 203, 211, 231, 271, 279, 304	\$30
ARTS 241, 251, 252, 253, 254, 261, 263, 281, 291	\$50
BIOL 111N, 118N, 122N, 124N, 137N, 139N	\$20
BIOL 404, 405W, 420, 473, 504, 520, 573	\$25
BIOL 103	\$30
BIOL 250, 251	\$35
BIOL 314	\$40
BIOL 315	\$45
CEE 335	\$20
CET 345W	\$30
CHEM 106N, 108N, 122N, 124N, 138N	\$50
CHEM 212, 214, 322, 332W, 334W	\$75
CHEM 442W/542	\$100
CS 101, 120G, 121G	\$30
CS 150	\$40
CYTO 428	\$45
DNTH 303	\$40
DNTH 301, 317	\$50
ECE 287, 387	\$25
ECE 407, 507	\$30
EET 125, 315, 325, 335	\$30

ENGN 110, 111	\$45
GEOG 402, 404, 502, 504	\$25
MATH 211, 212, 312	\$10
MAE 203, 225, 305	\$25
MAE 441	\$30
MDTS 401, 501, 601	\$45
MEDT 310, 312, 319, 320, 325, 326, 327, 331	\$45
MEDT 307	\$50
MET 387	\$20
MET 200, 400, 415	\$30
NURS 302	\$65
NURS 351	\$80
NURS 619, 658, 659, 660, 665, 674, 675, 764, 767	\$250
NURS 672	\$340
OEAS 106N, 107N, 126N, 127N	\$20
OEAS 110N, 111N, 112N	\$30
OEAS 440, 441, 442W	\$35
PHYS 103N, 104N, 111N, 112N, 126N, 127N, 226N, 227N, 231N, 232N	\$30
PT 627, 628, 826, 827	\$150
STEM 110T, 221, 231, 241, 350, 360	\$20
THEA/COMM 341, 370, 380, 385, 446, 483, 486	\$25

## Nonrecurring Charges and Fees—2014-15 Academic Year\*

Nonrecurring Charges and Fees	2014-15 Academic Year**
Application Fee**	\$50
Distance Learning On-Line Technology Fee	\$20 per credit hour
Late Penalty Fee	5% of past due amount
Payment Plan Processing Fee (non-refundable)	\$40
Returned Check Processing Charge	\$50
Collection Fees	25% of past due amount
Transcript Processing Charge (per copy)	\$5
Thesis, Dissertation Binding Service Charge	\$50
Additional Copies	\$16.50
Ph.D. Dissertation - Microfilming	\$65
Ph.D. Dissertation - Copyrighting	\$65

\* All fees are tentative and subject to final approval by the Board of Visitors and/or the President. Those listed are in effect as of 2014-15 and are subject to change.

\*\* Does not apply to Old Dominion University full-time faculty and staff and their full-time dependents and former Old Dominion University students seeking readmission who have not attended another institution since leaving Old Dominion.

## Residency

To be considered a Virginia resident for tuition purposes for any given semester, it is necessary that the applicant be domiciled in the Commonwealth of Virginia for at least one year immediately preceding the beginning of that term. Domicile is a technical legal concept and is defined as the place (state) where a person resides with the unqualified intention of remaining indefinitely, with no present intention of leaving. Domicile is generally evidenced by such things as payment of income, real estate,

and personal property taxes, voter and automobile registration, and driver's license. Residence in Virginia for the purpose of securing an education does not qualify a person for classification as a Virginia student for tuition purposes.

The General Assembly of Virginia has enacted several special provisions for active duty military, spouses and dependents. Please refer to [www.odu.edu/registrar](http://www.odu.edu/registrar) for current guidelines.

A student who meets the criteria for resident tuition during his or her course of study at Old Dominion University is not automatically reclassified to such status. He or she must request such classification, using an appeal form available from the Office of the University Registrar. By law, appeals of classifications must be submitted before the start of classes for the term in which a change is sought. Copies of the Virginia statute and guidelines issued by the State Council of Higher Education for Virginia are on reserve in the University Library and are available at [www.schev.edu](http://www.schev.edu) (<http://www.schev.edu>) (search for "domicile"). Because of the length of those requirements, they are not printed in this catalog. Additional information may be obtained from the Office of the University Registrar.

Students who fail to complete the Application for Instate Tuition are classified at the out-of-state tuition rate.

Student residency records may be audited for compliance with the Code of Virginia residency. Students may be required to submit proof of domicile following audit. Documentation may include driver's license, motor vehicle registration, etc.

## Billing Cycle

Through the act of registration, either by registering online or by registration form, students accept responsibility for charges incurred. All University charges are due and payable by the established deadlines. The total amount due must be received by 5:00 p.m. on the deadline date shown on the statement to avoid financial penalties. Students unable to pay the total due may opt for participation in the University payment plan (fall and spring only). If charges remain unpaid 30 days after the due date, a 5% late payment penalty is assessed. Once the account is 120 days past due, it is forwarded to a collection agency and assessed an additional 25%.

## Billing Statements

The University sends student account and debt notifications by e-mail. It is the student's responsibility to activate the ODU.EDU e-mail address issued to all admitted students. Please refer to Leo Online for specific types of notification covered. Approximately 30 days before the payment due date, advance billing statements for tuition and fees are sent to students who have preregistered. Students are expected to access account information through the secured access site on the web at [www.leoonline.odu.edu](http://www.leoonline.odu.edu). Any student who registers or adds classes after any advance billing may be issued a statement by electronic mail during the next billing cycle, and charges will be subject to late payment fees. Failure to receive a reminder bill confirming charges does not waive the requirement to make payment when due, and financial penalties may accrue.

## Failure to Pay Tuition

Students' registrations will not be canceled for failure to pay tuition. Nonpayment will not release students from the financial obligation for tuition charges. Students are strongly encouraged to follow University procedures and meet published deadlines to officially drop classes and be released from charges. Stopping payment on a tuition draft does not constitute a cancellation of the student's registration.

## Payment/Cashiers Office

Students may pay for tuition and fees with personal checks, money orders, cash, or credit card (VISA, MasterCard, Discover and American Express). The Cashiers Office no longer accepts credit card payments at the window. Cash payments should be made at the Cashiers Office ONLY. Check/money order payments may be mailed to Accounts Receivable/Cashiering, Old Dominion University, Alfred B. Rollins, Jr. Hall, Norfolk, VA 23529-0045. Personal checks will be accepted for the exact amount of fees and/or other

amounts owed the University. Students may make credit card payments via Leo Online. Students who pay using a credit card will be charged a convenience fee. Third party payments are accepted upon submission of authorization documents. Payments on all financial obligations to the University will be applied on the basis of age of the debt. The oldest debt will be paid first. Postdated checks are not scrutinized and will be deposited upon receipt. The Cashiers Office does not cash checks or make cash refunds. Checks must be provided in US dollars. Checks written in excess of assessed fees or other amounts paid the University will be accepted and processed, but the excess will be refunded to the student by mail or electronically at a later date. Over-payments on students' accounts of \$5 or less that are not created by a financial aid disbursement will not be refunded unless students request the refund from the Accounts Receivable office.

## Third-Party Payment Authorizations

The financial guarantee for payment of tuition and fees must be addressed specifically to Old Dominion University, Accounts Receivable, and printed on agency letterhead, purchase order, or voucher. Payments must be unconditionally guaranteed and made by the due date specified on the University's invoice. Amendments to the financial guarantee are required in writing. Prior to the University processing authorizations, students may receive an individual billing statement. Students must provide the third-party billing authorization or government training voucher to the Office of Finance before the student's individual payment due date. Failure to submit the authorization by the established deadline may result in a student billing, assessment of late fees and a financial hold on the student's account. An agency with a past due balance may have billing privileges terminated. Sponsoring agencies and students being sponsored by these agencies should be aware that the student is ultimately responsible for any defaults in payments by the sponsoring agency. A student whose employer or sponsor reimburses him or her for tuition after receipt of grades is not considered a third party. A student must pay in full upon registration or by the stated due date to avoid financial penalties. Contact the third-party billing coordinator for billing requirements or check the University web site.

## Student Account Inquiry

The University reserves the right to request information on the student identification number and/or a photo identification when releasing information or conducting other financial transactions. Specific account information will be released only to the student. Each student account can be viewed using any Internet browser. Students are strongly encouraged to access records directly through their secure access site on [www.leoonline.odu.edu](http://www.leoonline.odu.edu). Students are expected and required to assume responsibility for their own financial matters and to abide by the laws of the Commonwealth and the rules and regulations of the University. Failure to read and comply with University regulations will not exempt students from whatever penalties they may incur.

## Delinquent Accounts

The University will not issue a degree, diploma, transcript of grades, grade report, or permit a registration for future terms to any student who has not paid all debts in full. Students with account holds are permitted to drop classes to reduce debt or withdraw to prevent academic penalty.

## Collections

Virginia State law requires that the University make every attempt to collect past due amounts owed to state agencies. If, after 120 days, full payment of a debt has not been received, the account will be placed with a collection agency. Account holders are responsible for any collection costs incurred at a rate of 25% of the total due. Several other actions may be taken including the following: the account can be listed by the Credit Bureau as a bad debt; a delinquent account can be collected in full from income tax refunds, lottery winnings or other refunds due from the state (for Virginia residents); and the account may be turned over to the Virginia Attorney General's Office for litigation. Timely payment is strongly encouraged so that collection efforts can be avoided.

## Set-off Debt Collection Act

The University pursues debt in accordance with the guidelines set forth by the Commonwealth of Virginia in the Virginia Debt Collection Act. Under the provisions of this act, an individual's Virginia income tax refund, lottery winnings or other refunds due from the state will be subject to the University's claim for any unpaid balance of tuition and fees. Any communication disputing an amount owed must be submitted in writing to the accounts receivable manager, Office of Finance.

## Dishonored Checks and Charge Cards

A \$50.00 fee will be charged for each returned check or charge. If collection action is necessary, students will be liable for all collection agency costs. Stopping payment on a tuition draft does not constitute a cancellation of the student's registration. Each account will be allowed two returned checks, after which payment by check will not be accepted. This includes returned electronic payments. Care should be taken when entering bank account information when making an electronic payment. The \$50 fee will not be waived for errors in account entry.

## University Payment Plan (not available on past due balances)

The University offers a payment plan during fall and spring semesters ONLY. Payment plan agreements may be obtained through Leo Online and are established for a specified four-month period each semester (refer to the Office of Finance website). Payment plans are established on the student's total charges for tuition and/or housing. There is a \$40.00 non-refundable processing fee to establish the plan each semester. Students must be in good standing with their student account to be eligible to participate. Payment plan forms are available on the University's web site. Failure to pay on time may prevent students from using the payment plan process to defer payments in future terms. If any payment is 30 days past due, the student will be removed from the payment plan and the entire payment plan balance will be due and payable. A 5% late penalty will be assessed on the entire balance if a payment is 30 days past due.

## Tuition Refund Policy

The total tuition is considered fully earned by the University once scheduled classes have begun in any semester or summer session. Failure to attend the course after registering is not justification for elimination of charges.

For refund purposes, the beginning date of class is defined as the first official class date for the term. Students desiring to drop or withdraw from the University must formally notify the University using the official procedures set by the Office of the University Registrar. Refunds will be computed based on the actual withdrawal date certified by the Office of the University Registrar. Refunds will not be made to students who do not attend classes and have not completed the required withdrawal procedure. Refunds are issued by check or electronically (for those who sign up for e-Refunds) for all payments, including credit cards. Please refer to the Office of Finance website at <http://www.odu.edu/admissioncosts-tuition/tuition/refunds> for refund dates.

## Tuition Differentials

In accordance with the refund periods, a full or partial refund of the difference between tuition paid and the new tuition charges will be granted if the per credit rates differ. In those instances where the revised tuition charges are greater, the additional tuition charges will be assessed.

## Drop and Add

No refund or additional tuition charges are assessed for students who drop and add an equal number of credit hours on the same day within the same semester/session if the per credit tuition rates are the same.

## Special Situations

Administrative drops, as in the case of classes canceled by the University or the case of academically suspended students, entitle the student to a full refund of tuition.

## Refund Policy on Financial Aid Funds

Federal regulations mandate the treatment of refunds for financial aid recipients. Financial aid funds are returned to the government when charges were paid by financial aid and a refund is given a student who fully withdraws from the University. Financial aid recipients may request more detailed information from the Financial Aid Office as federal refund guidelines are subject to change.

## Tuition Appeal Policy

Students who must withdraw (with a grade of W or WF only) after the end of the refund period may appeal for a refund under the Tuition Appeal Policy. The purpose of the tuition appeal process is to provide an opportunity for students to explain mitigating circumstances that prohibited them from course completion. All appeals must be in writing with supporting documentation as appropriate. Upon review of the information submitted, the Tuition Appeal Committee may approve a refund or a release of financial charges under pre-approved conditions or recommend an exception. Committee decisions are final.

Students have the responsibility to submit an appeal within one year of the tuition due date for which charges are being appealed and to demonstrate compliance with the policy. Documentation is required, especially in cases of illness, death, and changes in employment shifts or military orders. Depending on the complexity of the appeal and the receipt of all supporting documentation, processing time on appeals can vary from two to four weeks. Late fees and collection fees are not appealable charges.

Tuition appeals will generally be approved for the following reasons as long as the appropriate supporting documentation on official letterhead with original signature is provided: extended periods of physical illness, extended periods of physical or mental illness of the student's immediate family member, death of a student's immediate family member, job transfers outside of Hampton Roads or extended campus site, involuntary changes in employment schedule or military deployment, or a statement from the Office of Student Affairs authorizing an administrative withdrawal for medical reasons.

Students are strongly discouraged from submitting appeals that are based on lack of awareness of University policies and procedures, changes in personal circumstances or decisions, dissatisfaction with academic progress, or personal errors in judgment, including not attending class, as they will not be considered for approval. Issues related to the dissatisfaction with course content, delivery of instruction, or dissatisfaction with an advisor or instructor should be addressed with the chair of the academic department rather than through this appeal process.

Tuition appeal forms are available from the Office of Finance web site. Please refer to the Office of Finance website for full details: <http://www.odu.edu/admission/costs-tuition/tuition/appeals>.

## Employee Fee Waiver

Full-time faculty and staff registered for on-campus courses may have the transportation fee waived provided a faculty/staff parking decal has been purchased. Accounts are adjusted after the end of the drop/add period.

## Senior Citizen Tuition Waiver

An educational benefit under the Code of VA 23-38.54-60, Senior Citizen's Higher Education Act of 1974, a senior citizen shall be permitted under regulations as may be prescribed by the State Council of Higher Education:

- To register for and enroll in courses as a full-time or part-time student for academic credit if such senior citizen had a taxable individual income not exceeding \$15,000 for Virginia income tax purposes for the year preceding the year in which enrollment is sought;

- To register for and audit courses offered for academic credit; and
- To register for and enroll in courses not offered for academic credit in any state institution of higher education in the Commonwealth of Virginia.

Such senior citizen shall pay no tuition or fees except those established for the purpose of paying for course materials, such as laboratory fees, but shall be subject to the admission requirements of the institution and a determination by the institution of its ability to offer the course or courses for which the senior citizen registers.

Senior citizen eligibility terms require that individuals must:

- Be at least age 60 before the beginning of the semester.
- Have had legal domicile in the Commonwealth of Virginia for at least one year before the first day of classes.
- Enroll in no more than three courses in a given semester with a tuition waiver.
- Register only on or after the first official day of classes. (Eligible students may submit the form found at [www.odu.edu/registrar](http://www.odu.edu/registrar), but staff will not process the form prior to the first day of classes for the semester.)
- Have a taxable individual income not exceeding \$15,000 for Virginia income tax purposes for the preceding year in order to be exempt from tuition for credit-bearing classes.

Senior citizens may be admitted to a course only on a space-available basis after all tuition-paying students have been accommodated.

Audited classes (no credit) are tuition-free for all senior citizens domiciled in VA.

## Perkins Loan Exit Interviews

The Perkins Loan Program requires that all recipients attend an exit interview before graduating, leaving the University, or attending less than half-time for the semester enrolled. During the interview session, the student is informed of his or her rights and responsibilities, including grace period, deferments and how they work, and cancellation privileges. Students are notified of exit interviews by mail. If a student fails to attend the exit interview or return the required materials, a hold is placed on the student's account, transcript and/or diploma until the University has received all the proper paperwork required to meet federal regulations. The Federal Direct Student Loan program is a distinctly separate loan program and has another exit process. For information on the Federal Direct Student Loan exit interviews, please contact the Office of Financial Aid.

## Deferment for Veterans

Old Dominion University offers a deferment for veterans, which extends the payment deadline for students whose veterans' benefits are not available by the tuition deadline. Generally, the deferment period extends the date of payment until the specified date shown below or until funds become available, whichever comes first. Deferments are a separate program and should not be confused with other University payment arrangements.

Students participating in educational programs through the Department of Veterans Affairs (VA) may qualify for a deferment of tuition only. Interested students should contact the Office of the University Registrar for more information. Deferments are only granted prior to the tuition deadline for each semester, provided all past due debts are satisfied. Veterans' deferments expire on November 1 for fall and April 1 for spring. No VA tuition deferments are offered for summer sessions.

## Balance of Aid Refunds

Grants, scholarships and loans are credited to the student's account in the order received. After all charges are fully paid, refunds will be issued as excess payments are credited to the account. Expected installment payments are deducted from the account prior to the release of the refund. All refund checks (except Plus Loan refunds) are made payable to the student and are mailed to the student's permanent home address or electronically deposited. The refund check will be mailed five to seven business days after the

refund entry is made on the account. Due to security reasons, checks are not available for pick up.

## Replacement Checks

Checks that are lost, mutilated or destroyed can be replaced. Mutilated or expired checks should be submitted for replacement. For checks that are lost, 10 business days from the date the original check was issued must expire before a written request for a replacement check will be accepted. The ten-day period allows for the original check to be forwarded by the postal service or returned to the University. A "stop payment" of the original check requires two-four business days to process at the bank. Once the stop payment has been confirmed by the bank, a replacement check can be issued. Expect a minimum of an additional two-four business days to process a replacement check. Please note that international checks will take longer.

## Education Tax Credits

The Taxpayer Relief Act (TRA) of 1997, enacted by Congress, created two tax benefits for families who are paying for higher education. On January 31 of each year, all eligible students are issued a 1098T form for the prior calendar year. Students are directed to consult a tax professional or the Internal Revenue Service for matters related to tax credits.

## Contact Information

Information related to tuition and fees, billing, refunds, payment options and related forms may be directed to Customer Relations located in the downstairs lobby of Alfred B. Rollins, Jr. Hall:

Local (757) 683-3030

Toll-free (800) 224-1450

e-mail [tuition@odu.edu](mailto:tuition@odu.edu).

Payment address:

Office of Finance

Old Dominion University

Alfred B. Rollins, Jr. Hall

Norfolk, VA 23529.

## Fees for Noncredit Programs

The fees for noncredit programs vary according to the activity. Noncredit courses are free to all senior citizens on a space-available basis.

# Student Financial Aid

The Office of Student Financial Aid supports the mission of the University by assisting students and their families in reducing or eliminating financial barriers that might prohibit their participation in the degree programs offered by Old Dominion University. The office administers need-based financial aid programs funded by Federal, State, University, and private sources in the form of grants, Federal Direct Subsidized loans, Federal work-study programs, and both merit-based and need-based scholarships. In addition, the office administers the William D. Ford Federal Direct Unsubsidized Loan program and the Federal Direct PLUS loan program, both of which are non-need-based federally-supported sources of funding. Alternative loan options are also available.

Regulations governing the administration of student financial aid are subject to unanticipated change. Information provided herein is as accurate as possible on the date of printing. For additional and updated information, students and interested parties are invited to visit the office's web site at <http://www.odu.edu/finaidoffice> or Old Dominion University's home page, <http://www.odu.edu>.

## Scholarships, Grants, Loans, and Student Employment

The University offers a variety of awards each year to qualified students who have been accepted for admission into degree programs. Some of these awards are available only to Virginia residents, while others are awarded without regard to state residency. Student assistance is offered on the basis of scholastic achievement and/or established financial need. Financial need is defined as the difference between the cost of education/attendance at Old Dominion University and the amount of money an applicant and his or her family are expected to make available from their income and assets to meet the expenses of that education. The eligibility for non-need Federal Direct Unsubsidized loans and Federal Direct PLUS loans is determined by a combination of factors, including dependency status, student classification (undergraduate/graduate, grade level), cost of attendance, and aggregate amount borrowed to date, to name a few.

To be eligible for assistance from the major student aid programs, a student must be a citizen or an eligible non-citizen. A student must be admitted and enrolled as degree seeking in an eligible program; must be registered with the Selective Service (if required); must not be in default or owe a repayment or refund on a federally guaranteed loan or grant; and must be in good academic standing (making satisfactory academic progress) to be eligible for financial assistance. Certain aid programs require a student to maintain a full-time status. There is one exception to the requirement that students be admitted on a degree-seeking basis: students who are admitted only for purposes of teacher certification may qualify for a William D. Ford Federal Direct Loan.

Financial aid eligibility is determined on an annual basis, for one academic year (Fall, Spring, Summer) only, and is determined for succeeding years upon re-application and continued eligibility. Applications for Old Dominion University-administered financial aid should be submitted as early as possible in January for consideration in the following academic year. Awards are offered on a first-come, first-served basis. Priority awards of grants funded by the Commonwealth of Virginia as well as for the Federal Supplemental Educational Opportunity Grant (FSEOG) Program are awarded to eligible students whose Free Application for Federal Student Aid (FAFSA) is received by the federal processing agency no later than February 15 preceding the academic year of interest.

To be considered for the Annual and Endowed Scholarships administered by the University, an Admissions application or the Scholarship Application for Continuing Students must be received by the University by February 15 preceding the academic year of interest. All admitted students are automatically considered.

An entering student must be accepted for admission into a degree-seeking program before receiving a financial aid eligibility notification email; however, a student who has not yet been accepted for admission may apply for financial assistance. Once admitted into an eligible degree program,

the student will automatically receive a notice of tentative financial aid eligibility. Announcements of financial aid eligibility for early applicants are generally made before May 1. The applicant will be notified by the Office of Student Financial Aid. In addition, the admitted student is encouraged to monitor the status of his/her application for aid and its subsequent processing by accessing his/her records on the University's secure online site, LEO Online. Students may be notified by e-mail to their Old Dominion University e-mail accounts throughout the year. Alerts, reminders, and student-specific information are mailed through the University's secure e-mail system throughout the year, and students are responsible for reading and responding to these communications.

The information regarding financial aid contained in this catalog is subject to changes or deletions without notification. Additional information concerning financial aid is available through the Office of Student Financial Aid. The federal Student Guide, which describes the federal student financial aid programs and how to apply for them, is also available free of charge from the Federal Student Aid Information Center (1-800-433-3243). The U.S. Department of Education provides efficient and secure access to information and government services and benefits for students via <https://studentaid.ed.gov/>.

## Application Requirements

To be considered for financial aid, a student must complete all documents and submit them as soon as possible after January 1 preceding the academic year for which application is made. (For example, a student planning to attend during the Fall Semester, 2013 would submit a financial aid application in January, 2013.) The documents and deadlines are described below. Note: The Free Application for Federal Student Aid (FAFSA) is required of all applicants for financial aid.

### Document 1: The Free Application for Federal Student Aid (FAFSA)

Submitting a completed and signed FAFSA initiates the process of applying for financial aid. The information provided by the student (and his/her parents) is used by the University and other awarding agencies to determine financial need and general financial aid eligibility. Because the FAFSA must reflect income for the calendar year preceding the academic year aid is being applied for, it cannot be signed until after January 1. When completing the FAFSA, use Old Dominion University's Title IV Institution Code (003728). Old Dominion University encourages students to take advantage of the electronic FAFSA option (FAFSA on the web, <http://www.fafsa.ed.gov/>), which is a secure and convenient method for completing the application process. All applicants and parents of dependent applicants should apply for a pin number with the Department of Education to sign the FAFSA application electronically. The FAFSA must be filed each year for which the student is requesting aid. FAFSAs received by the federal processor before February 15 preceding the fall semester receive priority consideration.

### Document 2: Student Aid Report (SAR)

Once the FAFSA is received and processed, the federal processing center will e-mail the Student Aid Report (SAR) to the applicant. Students are strongly encouraged to review and keep their SARs and all other financial-aid-related documents for future reference. The SAR contains valuable information as well as a unique data release code. Students should also keep copies of all documents used to complete the FAFSA, as they may be requested by the Office of Student Financial Aid as part of the federally-required verification process.

### Document 3: Employment Eligibility Verification (Form I-9)

Students who are eligible to participate in the federal work study program will be required to submit certain documents. The Immigration Reform and Control Act of 1986 requires all employees of the University to complete an Employment Eligibility Verification (Form I-9). Student employees who wish to work on or off campus must be prepared to complete the I-9 Form before they begin working.

The I-9 Form cannot be completed unless the employee provides documents to verify both identity and employment eligibility. The following documents will satisfy this requirement:

- A U.S. passport
- A certificate of U.S. citizenship (INS Form N-560 or N-561)
- A certificate of naturalization (INS Form N-550 or N-370)
- An unexpired foreign passport bearing an unexpired endorsement by the U.S. Attorney General for work in the U.S.
- A resident alien card or registration card with a photograph, which authorizes employment
- A temporary resident card (INS Form I-688)
- An employment authorization card (INS Form I-688A)

If one of the previously referenced documents is not available, an applicant or employee must submit both a document verifying employment eligibility and a document establishing identity. Documents that verify employment eligibility include:

- A social security card (unless on its face it shows that its issuance does not authorize employment in the U.S.)
- An unexpired reentry permit (INS Form I-327)
- An unexpired refugee travel document (INS Form I-571)
- An employment authorization document issued by the Immigration and Naturalization Service
- A native American tribal document
- A U.S. citizen identification card (INS Form I-197) or identification card for use of resident citizens in the U.S. (INS Form I-174)
- A U.S. birth certificate issued by the Department of State (Form FS-545)
- A certificate of birth abroad issued by the Department of State (Form DS-1350)
- An original or certified copy of a birth certificate issued by a state, county, or municipal authority bearing a seal

Documents establishing identity include:

- A photo driver's license or other state-issued identification document. If the driver's license or identification card does not include a photograph, it should provide identifying information, such as name, date of birth, sex, height, color of eyes, and address.
- A school identification card with a photograph
- A voter registration card
- A U.S. military card or draft record
- An identification card issued by federal, state, or local government agencies or entities
- A military dependent's identification card
- A U.S. Coast Guard Merchant Mariner card
- A driver's license issued by a Canadian government authority

## Document 4: Consortium Agreement and Dual Enrollment Forms

Students attending classes at a distant site may be required to submit these forms. These students should consult with their site director and their financial aid counselor to determine if these forms are required.

## Satisfactory Academic Progress for Financial Aid Eligibility

### The Policy

Maintaining Satisfactory Academic Progress is one of many federally mandated criteria viewed in determining a student's eligibility for continued receipt of financial aid. Progress is measured by PACE (the number of credits earned in relation to those attempted), Qualitative (GPA) standard and Allowable time (the maximum time frame allowed to complete the academic program). Students must also demonstrate a progression toward completion of their degree program within an established timeframe. Failure

to maintain Satisfactory Academic Progress will result in loss of financial aid eligibility. Progress is reviewed annually, at the end of the academic year.

### A. PACE

Undergraduate

In order to maintain financial aid eligibility, an undergraduate student is required to complete 67% of the total credit hours attempted.

How to calculate PACE:

- Cumulative number of credit hours student *successfully completed* divided by the cumulative number of credit hours *student attempted*

### B. Qualitative

Qualitative Satisfactory Academic Progress for students is evaluated in accordance with the following:

- Undergraduate Hours Earned: 1+
- Minimum G.P.A.: 2.0

### C. Allowable Time

The maximum allowable time to be eligible for most financial aid programs for a full time undergraduate student is five years or 10 semesters. Students attending less than full-time will be eligible for aid for semesters registered, not to exceed the equivalent of 10 full-time semesters.

Undergraduate students at Old Dominion University may attempt a maximum of 180 credit hours. Undergraduates working on a second degree will be given an additional 90 hours to earn their second degree. Note: Transfer credits are included.

### Satisfactory Academic Progress Review

The Office of Student Financial Aid will conduct a review of Satisfactory Academic Progress at the end of each academic year. Email notifications of Satisfactory Academic Progress standard(s) not met will be sent to the student's ODU email account.

Please note that students who have not received financial aid in previous years but are applying for financial assistance for the first time will also be held to the requirement of maintaining Satisfactory Academic Progress. Satisfactory Academic Progress is reviewed for all semesters of a student's enrollment regardless of whether the student was eligible for financial assistance during a term. If students exceed the maximum allowable time, they are not meeting Satisfactory Academic Progress; thus, all aid will be suspended.

Financial Aid suspension does not prohibit students from continuing their education at Old Dominion University. It does prohibit students from receiving financial aid until they again meet the standards for Satisfactory Academic Progress.

### Financial Aid Suspension

Students who fail to meet Satisfactory Academic Progress are placed on financial aid suspension. Students have the option to appeal this suspension. An appeal must be based on significant mitigating circumstances that seriously affected academic performance. The decision of the appeal will be sent via email to the student's ODU email account. Note: Please make sure the student email account is activated.

### Financial Aid Probation

For students who are successful in their appeal, aid will be reinstated; however, the student will be placed on probation for one payment period/term. Emails will be sent to students on financial aid probation advising them of the conditions needed. At the conclusion of the probation term, the student must be meeting the University's Satisfactory Academic Progress standard in order to qualify for further Title IV Funding. If it is determined that a student will need more than one probationary term, the student must be placed on an academic plan.

### Academic Plans

An academic plan will be developed by the student and their academic advisor. All academic plans will be monitored each term. If the student

fails to meet the standards set up in the plan, the student will no longer be eligible for financial aid until the student establishes eligibility on their own. Students who fail to meet the conditions outlined in their academic plans during their probationary semester will not be eligible to submit a subsequent appeal.

### The Appeal Process

The appeal form may be downloaded from the Student Financial Aid website at <http://www.odu.edu/finaidoffice>

The basis for an appeal includes:

1. Death of a relative
2. Student/parent injury or illness
3. Serious illness or injury of a parent/guardian, spouse or child that required the student to be the primary caregiver and prevented the student from passing the course(s)
4. Other special circumstances such as divorce/separation, natural disaster, extreme change in financial or legal circumstances, etc.)
5. Documentation or evidence that supports the reason(s) must be included with the appeal. This might include a letter from a doctor, court documents, death certificates or copies of University documents, layoff notices, foreclosure notices, etc. Copies should be attached. Original documents will not be returned.

Appeals will NOT be accepted for the following conditions:

- 1) Encountering a situation that could have been anticipated, such as the need to have transportation, the need to pay for ordinary living expenses, the need for child care, etc;
- 2) Change of major
- 3) Dissatisfaction with course material, instructor, instructional method, or class intensity
- 4) Lack of motivation, change in academic interest

Directions for filing an appeal for reinstatement of eligibility for financial aid are as follows:

1. Students should use the SATISFACTORY ACADEMIC PROGRESS APPEAL FORM to write the appeal.
  - a. State clearly why the condition(s) cited were not met.
  - b. Attach documentation if necessary.
  - c. State what has changed that will allow demonstration of Satisfactory Academic Progress at the end of the next evaluation period.
  - d. To confirm extenuating circumstance(s), students must attach documentation from an objective third party (e.g. physician, counselor, lawyer, social worker, teacher, religious leader, academic advisor).
  - e. Documentation submitted will remain confidential. Appeals will be reviewed only by financial aid personnel.
2. Students should meet with their academic advisor or the dean of their college to complete the REQUEST FOR WRITTEN EVALUATION OF ACADEMIC PERFORMANCE form.

NOTE: If the appeal is submitted without the advisor or dean's evaluation, it will not be considered.

3. Students should submit the complete appeal packet and all supporting documents within 14 days of receipt of notification. Failure to submit the complete packet will result in cancellation of aid.

Allow two weeks for the review of the appeal and receipt of the decision notification. If the appeal is approved, the decision notification will outline the conditions of the student's contract for reinstatement of aid eligibility. The contract is binding and academic progress will be reviewed at the end of the enrollment period specified. If the appeal is denied, the decision notification will specify the conditions for future consideration for financial aid eligibility.

The decision of the financial aid review committee is FINAL and cannot be appealed.

If the appeal is unsuccessful, an email notification will be sent notifying students of the decision and informing them how to re-establish eligibility if applicable.

### Re-establishing Eligibility

Students may re-establish their eligibility for financial assistance by achieving the satisfactory progress standards. This will be at students' expense as they are ineligible for financial aid. Sitting out a semester at Old Dominion University will not assist in re-establishing eligibility. Once students have earned the required grade point average or completed the required credit hours, they must contact the Office of Financial Aid to request the reinstatement of their financial aid eligibility.

Students not making Satisfactory Academic Progress at the end of the second year, but at the end of the subsequent grading period, come into compliance with the University's graduation requirements; they will be considered to be making Satisfactory Academic Progress beginning with the next grading period.

### Withdrawing from Courses

Withdrawing from courses may impact financial aid awards. Before withdrawing from class, students should contact the Financial Aid Office to determine the consequences.

### Withdrawing from the University

Students who totally withdraw from the University and receive aid may owe the University money. Before withdrawing from the University, students should contact the Financial Aid Office to determine the consequences.

Withdrawing from all courses for two consecutive semesters may result in loss of financial aid eligibility.

**Incompletes:** Courses assigned a grade of "I" are not considered complete and will not be included in the total credits earned until the final grade has been submitted.

### Transfer and Repeat Coursework

Accepted transfer credits must count as both attempted and completed hours.

Repeated coursework will count toward enrollment status when there is no more than one repetition of a previously passed course or any repetition of a previously passed course due to the student failing other coursework in a prior term.

Example:

- Student enrolls in four fall courses – passes three and fails one
- University required student to retake all four courses
- May count the failed course in the next enrollment status
- May not count the passed courses
- Developmental/remedial courses may be included; however, enrichment and English as a Second Language courses ARE NOT taken into consideration.

## Federal Programs

Students must submit the Free Application for Federal Student Aid (FAFSA) to determine eligibility for all of the following federal financial aid programs.

### Federal Pell Grant Program

A Federal Pell Grant, unlike a loan, does not have to be repaid. Pell Grants are only awarded to undergraduate students who have not earned a bachelor's degree. For many students, Pell Grants provide a foundation of financial aid to which other aid may be added. The amount of Federal Pell Grants students may receive over their lifetime is limited to an equivalent of six-years of Pell Grant funding.

## Federal Supplemental Educational Opportunity Grant (FSEOG)

Like the Federal Pell Grant, this award assists undergraduate students only and does not have to be repaid. This grant is made to students who demonstrate exceptional financial need (very low expected family contribution, or EFC). Students who meet all other eligibility criteria and whose FAFSAs were received by the federal processing agency by the priority deadline (February 15) are considered for this grant. It is awarded on a first-come, first-served basis. Federal funding for this program is extremely limited.

## Federal Work Study (FWS) Program

This program provides jobs for undergraduate and graduate students with financial need, allowing them the opportunity to earn money for educational expenses. The FWS program encourages community service work such as tutoring and work related to the course of study. A student who qualifies for FWS is not automatically guaranteed employment. Students must apply for available positions and cannot be a participant of the Learn and Earn Advantage Program (\*LEAP). The Career Management Center (CMC), located at 2202 Webb University Center, maintains a listing of available positions as provided by offices across campus in ODU CareerLink through its website at <http://www.odu.edu/cmc>. The CMC also manages the following FWS programs for the University: Student Temporary Assistance Team (STAT), Community Service Internship (CSI), America Reads Tutoring and America Counts Tutoring. Contact the CMC at (757) 683-4388 for information on completing the application process for these CMC managed programs.

\***The Learn and Earn Advantage Program (LEAP)** offers first year undergraduate ODU students the opportunity to be selected for part-time on-campus jobs with ODU departments and Regional Higher Education Centers. Jobs last one semester, averaging 10-15 hours per week, with students making \$8.00 per hour for a total maximum of \$2,400 per academic year. Students who do not have Federal Work Study awards and have financial need as determined by the Financial Aid Office will receive a LEAP award letter. To claim their LEAP award, students must meet minimum GPA requirements each semester, successfully complete the UNIV 195 LEAP course and have satisfactory work supervisor evaluations and recommendations to remain eligible. A limited number of positions are available each semester and are filled by the order of completed University employment applications packets received by CMC. Contact the Career Management Center at (757) 683-4388 for information on completing the application process.

## Federal Perkins Loan Program

This low-interest (5 percent) loan is targeted for students with exceptional financial need. A Federal Perkins Loan borrower is not charged an origination fee or an insurance premium. A Federal Perkins Loan must be repaid.

## Federal Direct Student Loan Programs

Old Dominion University participates in the William D. Ford Federal Direct Loan Program and thus receives loan funds directly from the U.S. Department of Education upon disbursement (payment) to eligible students. There are three kinds of loans:

### William D. Ford Federal Direct Subsidized Loans

The federal government will pay the interest on these loans while students are in school and during deferments (postponements of repayment). Students must demonstrate financial need to receive this type of loan. Only undergraduate students may be eligible and must be enrolled at least half time. Like all other forms of aid, loans are disbursed to student accounts on a semester-by-semester basis, and eligibility must be re-confirmed prior to release.

### William D. Ford Federal Direct Unsubsidized Loans

Loans are available to eligible students regardless of financial need, but students will be required to pay all interest charges, including the interest that accumulates during deferments.

## The Federal Direct Parent Loan for Undergraduate Students (PLUS)

This is available for parents of dependent students who filed the FAFSA and who meet other general eligibility requirements. Applications for this loan must be obtained through the Office of Student Financial Aid. They are not automatically offered but are available upon the written request of the parent borrower. Parents are responsible for all interest charges. PLUS Loan applications are subject to credit approval.

## State Programs

The Virginia Student Financial Assistance Program (VSFAP) was established to assist students with financial need. VSFAP Funds are used for need-based grants to Virginia resident undergraduates or for assistantships and fellowships to graduate students. As funds are limited, they are awarded on a first-come, first-served basis, with students meeting the priority FAFSA receipt deadline (February 15 receipt by federal processing agency) being given first consideration. Awards are limited to 125% of degree (cannot exceed 150 attempted credits). Specific Satisfactory Academic Progress requirements that are more rigorous than those for federal financial aid eligibility consideration apply. Interested students are encouraged to visit the State Council for Higher Education in Virginia web site at <http://www.schev.edu> for detailed information and program regulations and guidelines.

## Commonwealth Award

In order to be eligible for a Commonwealth award, a student must be admitted into a Virginia public two or four year college or university, a domiciliary resident of Virginia as defined by the Code of Virginia 23-7.4, demonstrate financial need as determined by the institution (FAFSA required), be enrolled at least half-time in an eligible baccalaureate program, a U.S. citizen or eligible non-citizen, and otherwise eligible for federal financial aid. This is a grant and does not have to be repaid. The actual awards vary by institution and are based on funds available. The awards may not exceed tuition and required fees. Additional restrictions, such as minimum GPA or maximum hours attempted, affecting state grant eligibility may be enacted during the period covered by this catalog.

## Virginia Guaranteed Assistance Program (VGAP)

In order to be eligible for a VGAP award, a student must meet all the Commonwealth award requirements, and must also be a graduate of a Virginia high school, have a minimum cumulative high school grade point average of 2.5 on a 4.0 scale, and be classified as a dependent student for federal financial aid purposes. A student generally enters the VGAP program as a freshman. Renewal of the VGAP grant is dependent upon several factors, including a minimum 2.0 GPA each semester, completion of a minimum of 12 hours each semester (full-time completion), early FAFSA filing, demonstrated financial need, and continuous full-time enrollment (minimum 12 credit hours per semester) from year to year (summer excluded). As with all other aid programs, audited courses do not count toward full-time enrollment. Participation in the VGAP program is limited to the first four years of attendance (fall/spring enrollment for four consecutive academic years). Additional restrictions, such as minimum GPA or maximum hours attempted, affecting state grant eligibility may be enacted during the period covered by this catalog.

## Conditions for Disbursement of Financial Aid

The Office of Student Financial Aid publishes a "Statement of Student Responsibility & Conditions for Release of Financial Aid" document each academic year. This statement is included with the initial award notification mailed to the student and is also accessible on the Financial Aid Office page of the University web site <http://www.odu.edu/finaidoffice>. When students



accept financial aid, they also acknowledge that they have read and agree to comply with the Statement. A limited sample of conditions is as follows:

1. Initial financial aid notices are based on the assumption that the student will enroll full time.
2. Students are required to communicate immediately with their counselors any changes in the enrollment level or student type during the period leading up to the beginning of each semester as they may impact the student's aid eligibility. Financial aid is based upon full-time (12 or more credits), three-quarter-time (9-11 credits), or half-time enrollment (6-8 credits). If a student's aid has been calculated based on an enrollment level different from the actual enrollment for that semester, the aid will not be released until the student has notified the counselor and the counselor has reviewed and recalculated aid eligibility. Financial aid eligibility changes when enrollment level changes. Students who drop courses are responsible for notifying the financial aid counselor immediately. Aid will be reduced accordingly and financial aid already received will be due back to the University. This also applies to "balance-of-aid" payments made to students prior to dropping or withdrawing from courses.
3. The student is responsible for repayment of any and all financial aid received if adjustments resulting from unreported or misreported information discovered through verification, third-party notices, account reviews, and/or Quality Assurance findings lead to reductions in aid. All students who appear to qualify for a Federal Pell Grant are required to confirm all information submitted on the FAFSA as part of the federal verification process. Documents such as Federal Income Tax transcripts, W-2 forms, Leave and Earnings Statements, notices of SSI benefits, and Verification Worksheets will be required. Other documents may be requested to confirm marital status or other information provided on the FAFSA during the verification process.
4. The student is responsible for reporting additional educational assistance received through sources other than the Financial Aid Office. Financial aid may be adjusted according to federal regulations as a result of additional educational assistance received and not reflected initially. The student bears responsibility for reporting any additional aid in the form of scholarships from outside sources, Vocational Rehabilitation Benefits, Graduate Tuition Scholarships, Veterans Benefits, Senior Citizen Tuition Waivers, Employer Assisted Tuition Payments, Third Party Payment Agreements involving any outside group or company, and all other forms of assistance. The student must report these external sources of financial assistance immediately to his/her financial aid counseling team.
5. It is the student's responsibility to notify the Financial Aid Office if the enrollment level or student type changes (examples: degree seeking to non degree/certificate program; undergraduate to graduate, etc).
6. Federal Direct Student Loans and Federal Perkins Loans require Promissory Notes. Federal Direct Student Loan promissory notes may be signed online. Federal Perkins Loan Promissory Notes are produced by the Office of Student Financial Aid after all eligibility conditions have been met. Students must complete and sign the promissory notes before the loan process can be completed. Entrance loan counseling is required of all first-time borrowers prior to release of loan proceeds.
7. Transfer credit evaluations for new transfer students may result in additional loan eligibility. Students may request an account review once all transfer credits have been evaluated and are reflected on the student's official academic transcript.
8. A tentative or conditional financial aid package assumes a level of federal and state appropriations which are frequently undetermined at the time of preparation. If legislative bodies fail to provide the anticipated funding level, it may be necessary to reduce or cancel certain types of aid, particularly grants. Students will be notified immediately if such changes become necessary.
9. The Office of Student Financial Aid reserves the right to review, modify or cancel financial aid at any time on the basis of new information affecting student eligibility, including but not limited to changes in financial resources, residence, academic status, or changes in the availability of funds.

10. Students who withdraw from all courses are subject to regulations regarding the **Return To Title IV Funds** requirement. If the date of complete withdrawal precedes the date on which 60% of the academic semester has been completed, a prorated portion of all Title IV student financial assistance will be due back to the federal programs. The University policy regarding tuition refunds following withdrawal is stated in the catalog and is independent of the Return of Title IV funds regulations. **Students who withdraw from the University before 60% of the semester has elapsed should anticipate repaying a significant portion of Title IV financial assistance. Additionally, students who failed to earn a passing grade during the term are subject to the same federal guidelines.**

## Scholarships

### Merit-Based Scholarships

All entering fall freshmen and transfer students who submit their admission application and ALL required credentials by the scholarship application priority deadline (December 1) are considered for merit-based scholarships offered through the Old Dominion University Office of Admissions. The admissions application serves as the merit-based scholarship application.

Information related to scholarship criteria can be found on the Admissions web site.

### Annual and Endowed University Scholarships

Scholarships at Old Dominion University have been established through the generosity of individuals, organizations and corporations to recognize outstanding academic performance and to assist students in pursuing their educational goals. Scholarship awards are based on a variety of criteria. For some awards, eligibility is entirely determined by academic merit or potential. Other requirements might include demonstrated financial need, field of study, state or city residency, graduation from a particular high school or participation in a specific program, organization or activity. Generally, recipients have earned at least a 3.4 grade point average (on a 4.00 scale) and are full-time, degree-seeking students.

All first-time freshmen and transfer students will automatically be considered for academic and endowed scholarships based on their admissions application. The majority of scholarships offered to Old Dominion University students are based on information already known to the University.

The Scholarship Form for Continuing and Graduate Students is available for students who have a change in scholarship eligibility according to the Criteria Check List (included in the Scholarship Form). Continuing students who meet the above circumstances must complete and submit the form to the Office of Student Financial Aid, 121 Rollins Hall, Norfolk, VA 23529-0052. **The form must be received by February 15 each year to be considered for scholarships for the following academic year.** The information provided on the Form for Continuing and Graduate Students will be maintained and used for scholarship selection for the duration of the student's attendance at Old Dominion University. **It is not necessary to complete the form more than once during attendance at Old Dominion University, UNLESS the required information has changed. To determine eligibility for need-based scholarships (designated by an asterisk (\*)), students must also file the Free Application for Federal Student Aid (FAFSA) PRIOR to February 15 of the appropriate academic year.**

Selection procedures vary for these awards. All scholarships require admission to and enrollment in a degree program at Old Dominion University. For some scholarships, a portfolio, an audition or participation in a specific program may be required. A (+) denotes that graduate students are eligible for scholarships. The additional steps, if required, are summarized following each scholarship description.

Students will receive written notification of any scholarship for which they have been selected. Most scholarships will be awarded in April and May of each year. All scholarships must be formally accepted in writing.

## Awards for Entering Freshmen

### **The Nicholas Andrasz Academic and Social Service Endowed**

**Scholarship** was established by Nicholas Andrasz to assist an entering freshman who has graduated from a Virginia Beach high school. The recipient must have a minimum 3.25 grade point average, minimum 1000 combined SAT score and must have spent a considerable amount of non-paid volunteer time helping to make their community a better place. The recognized categories of non-paid volunteer time are: Hospital Volunteer, Public Safety, Mentoring/Tutoring, Shelters, and Elder Care. Students must provide reasonable documentation as proof of their public service. Preference is given to a student who has previously been awarded the Nicholas Andrasz Endowed Scholarship from Tidewater Community College.

### **The Beta Sigma Phi-Alice Brewer White Memorial Endowed**

**Scholarship** is made possible by an endowment established in 1985. This award assists an entering freshman who is from Southside Hampton Roads. Preference will be given to students with a 3.20 grade point average and Beta Sigma Phi affiliations, including mother, grandmother or aunt. The student may also be a member of Beta Sigma Phi. Leadership ability and community involvement are factors in selection. This scholarship is renewable.

**The James L. Bugg Scholarship** was established in 1978 by the Old Dominion University Alumni Association to honor this former University president. The award is made to an alumnus' son or daughter who has participated in extracurricular activities and community service and displays top academic achievement.

**The CHROME Scholarships** are funded by the University and awarded to entering freshmen who have participated in a certified high school CHROME club. Recipients must intend to pursue a degree in engineering, mathematics, science, technology or a related field.

**The Claire Virginia Dabel Memorial Scholarship** is funded through an endowment established by Dr. Virginia B. Newbern to assist one or more freshmen students majoring in the field of biology.

**The Peter G. Decker Scholarship** is funded by an endowment established by Peter G. Decker and the estate of Celia Stern. This scholarship is awarded to students who have graduated from the Old Dominion Lambert's Point Summer Program and are admitted to Old Dominion University upon completion of high school.

\***The E. L. Hamm Endowed Scholarship** was established by Edward L. Hamm, Jr. to assist a student who is residing in or has resided in Norfolk Redevelopment & Housing Authority properties. The recipient must be a full-time undergraduate student who demonstrates financial need. (FAFSA)

\***The James W. Ingersoll Memorial Scholarships** are made possible by an endowment given by the Ingersoll family, their friends and the citizens of Portsmouth, Virginia. These awards assist entering freshmen who demonstrate financial need and are graduates of Churchland High School in Portsmouth. (FAFSA)

\***The Ron Jet Jones Memorial Scholarship in English** was established by Barbara Ann Jones to assist one or more full-time entering freshmen with an intended English major and a high school grade point average of 3.75. Student (s) must have held leadership positions in clubs or organizations in high school and must demonstrate financial need. (FAFSA)

**The James V. and Donna L. Koch Endowed Scholarship** was established by the Old Dominion University Educational Foundation in 2001 to honor this former University president and his wife. This four-year scholarship assists an incoming freshman with a minimum 1300 SAT score, 3.80 cumulative grade point average and extracurricular involvement. The scholarship can be renewed if the student maintains eligibility criteria.

**The Edgar and Kathleen Kovner Scholarships** for outstanding high school scholars are awarded each year to entering freshmen in the Frank Batten College of Engineering and Technology. The awards are based on performance in a high school curriculum that emphasized mathematics and the sciences. These scholarships are renewable for three years for recipients

who remain enrolled full time in the Frank Batten College of Engineering and Technology and maintain a 3.00 grade point average.

**The A. D. Morgan Scholarships** are supported by a trust established in 1968 by Dr. A.D. Morgan and Annye Lewis Morgan. The scholarships assist Old Dominion University students who are U.S. citizens and residents of the greater Norfolk area. Preference is given to the members of the Freemason Street Baptist Church of Norfolk. Recipients are selected by the trustees of the Scholarship Fund and coordinated through the Old Dominion University Office of Student Financial Aid.

\***The Patricia Ann Vaughan Myers '57 Memorial Scholarship** was established by Hugh L. Vaughan in honor of his daughter, Patricia Ann. It assists an entering freshman who is a Virginia resident and a resident of the Tidewater area. The student must demonstrate financial need, academic merit and be a full-time student under the age of 24 who lives at home. (FAFSA)

**Norfolk School Board Scholarships** are funded by the University and awarded to ten entering freshmen graduates of Norfolk public or private schools. Students are selected based on their high school academic achievement. The award equals full in-state tuition (up to 15 credit hours per semester). Recipients are selected by the Director of Guidance of the Norfolk Public School system, in conjunction with the high school guidance counselors. Recipients may qualify for a one-year renewal of the award by maintaining a 2.50 grade point average and completing 24 academic units at the end of the first academic year.

**The Pace Collaborative Endowed Scholarship in Engineering** has been established by PACE Collaborative PC to assist an incoming freshman intending to major in engineering. The student must be a full-time student, have attained a minimum high school GPA of 3.0, and must be a U.S. citizen or Permanent Resident. The scholarship may be renewed up to three academic years if the student maintains a 2.5 GPA.

**The Parents' Association of Old Dominion University Freshman Scholarship** is funded by an endowment by the organization to assist an outstanding entering freshman who has demonstrated academic merit and leadership skills.

**The Parents' Association of Old Dominion University Freshman '90 Scholarship** is funded by an endowment by the organization to assist an outstanding entering freshman who has demonstrated academic merit and leadership skills.

\***Regional Scholarship** awards are provided by the University in the amount of \$1,200 to entering freshmen from Accomack County, Chesapeake, Franklin, Hampton, Isle of Wight, Newport News, Northampton County, Portsmouth, Southampton County, Suffolk, Surry and Virginia Beach public high schools. Students must demonstrate financial need. Students may qualify for a one-year renewal of the award if they maintain a 2.50 grade point average, complete 24 academic units for the year and demonstrate financial need. (FAFSA)

\***The Rafael Torrech-Tecnico Endowed Scholarship in Engineering** was established by Tecnico Corporation in honor of Rafael Torrech III to assist entering freshmen from a local Hampton Roads high school with preference to children of parents who are employed at Tecnico Corporation. Students must be full-time, intending to major in the Batten College of Engineering and Technology, maintain a cumulative GPA of 3.0 or better, and demonstrate financial need. (FAFSA)

## Old Dominion University Dominion Scholarships for Entering Freshmen

**The Theodore F. and Constance C. Constant Dominion Scholarship** was established by Theodore F. and Constance C. Constant to assist incoming freshmen who present a minimum 3.8 cumulative grade point average, rank in the top 10 percent of their graduating class, and score 1280 or better on the Scholastic Assessment Test. The recipient must be a Virginia resident, with preference given to Hampton Roads residents.

**The Mary T. Cooper and Dudley Cooper Dominion Scholarship** was established by Mary T. Cooper and Dudley Cooper to assist incoming

freshmen who present a minimum 3.8 cumulative grade point average, rank in the top 10 percent of their graduating class, and score 1280 or better on the Scholastic Assessment Test. The recipient must also be a United States citizen.

**The Clifford and Ann Cutchins, III Dominion Scholarship** was established by Mr. and Mrs. Clifford A. Cutchins, III to assist incoming freshmen who present a minimum 3.8 cumulative grade point average, rank in the top 10 percent of their graduating class, and score 1280 or better on the Scholastic Assessment Test.

**The Robert L. and Geraldine E. Fodrey Alumni Association Memorial Scholarship** Endowment was established by the Old Dominion University Alumni Association to assist incoming freshmen who present a minimum 3.8 cumulative grade point average, rank in the top 10 percent of their graduating class, and score 1280 or better on the Scholastic Assessment Test.

**The Harry H. and Marie Mansbach Dominion Scholarship** was established by Harry H. and Marie Mansbach to assist incoming freshmen who present a minimum 3.8 cumulative grade point average, rank in the top 10 percent of their graduating class, and score 1280 or better on the Scholastic Assessment Test.

**The Joseph M. Marchello Dominion Scholars Endowment** was established by the Old Dominion University Alumni Association to assist incoming freshmen who present a minimum 3.8 cumulative grade point average, rank in the top 10 percent of their graduating class, and score 1280 or better on the Scholastic Assessment Test.

**The Clark-Nexsen Dominion Scholarship in Engineering** was established by Clark-Nexsen, PC, Architecture & Engineering and the ODU alumni employees of Clark-Nexsen, PC to assist an incoming freshman who is a resident of Virginia, ranks in the top 10% of high school class, has attained a minimum combined Scholastic Assessment Test (SAT) score of 1200, and demonstrates potential for leadership.

**The Sam H., Willie Mae, and Herbert L. Sebren Dominion Scholars Memorial Endowment** was established by Mr. Sam H. Sebren, Sr. and Mrs. Lucille Sebren to assist incoming freshmen who present a minimum 3.8 cumulative grade point average, rank in the top 10 percent of their graduating class, and score 1280 or better on the Scholastic Assessment Test.

**The William B. Spong, Jr., Dominion Scholar Endowment** was established by the Old Dominion University Alumni Association to assist incoming freshmen who present a minimum 3.8 cumulative grade point average, rank in the top 10 percent of their graduating class, and score 1280 or better on the Scholastic Assessment Test.

## The College of Arts and Letters

\*+**The H. Lee Addison, III Scholarship in History** was established to assist a full-time undergraduate or graduate student majoring in history who has a minimum GPA of 3.0.

\***The Herbert Altschul Memorial Scholarship** in Humanities is made possible by an endowment given by the family of the late Herbert Altschul, a Norfolk businessman and former owner of Altschul's Department Store. This award assists three juniors who demonstrate financial need, are U.S. citizens and are majoring in the Humanities. (FAFSA)

\* **The Nora Barnes Endowed Scholarship in Political Science** was established to help assist a full-time student majoring in political science. The recipient of this scholarship must have at least a 2.5 grade point average and demonstrate financial need. (FAFSA)

\***The Bruce T. and Sarah Bishop Endowed Scholarship** was established to assist a full-time student in the College of Arts and Letters who has a cumulative GPA of 3.0 or better, demonstrates financial need, and demonstrates evidence of involvement in student activities. (FAFSA)

\***The Linda H. and Edward Bradley Endowed Scholarship** was established to assist an undergraduate student in the College of Arts and Letters with a minimum GPA of 3.0 who is eligible for the Federal Pell grant. (FAFSA)

+**The Eliot S. Breneiser Memorial Scholarship** was established to assist a full-time music major in either the piano performance program or the music education program with a concentration in piano. Information concerning audition requirements is available from the Music Department. (AUDITION, PARTICIPATION) (757) 683-4061

\***The Martha Brown Endowed Scholarship** is made possible by the friends of Martha Brown. It is awarded to assist a full- or part-time student in the College of Arts and Letters. The recipient must be a sophomore or junior and maintain a minimum cumulative grade point average of 3.0 pursuing a minor in African American Studies. The student must also demonstrate financial need. (FAFSA)

\*+**The Dr. James V. D. Card Scholarship Fund** was established to assist an undergraduate or graduate student who is majoring in English. The recipient must demonstrate financial need. (FAFSA)

**The Claire Cucchiari-Loring Memorial Scholarship** was established by the Cucchiari and Loring families in honor of Claire Cucchiari-Loring. A scholarship is to be awarded annually to one or more full- or part-time musically talented students to be chosen by the Director of the Jazz Program. The recipient must be an undergraduate with a major in performance or voice. Preferred criteria include membership in the ODU Jazz Choir, membership in the ODU Jazz Band, and membership in the ODU Madrigal Singers.

**The Marie A. Dornhecker-French Language Endowed Scholarship** is funded by the Marie A. Dornhecker Charitable Trust and was established in 1998. The recipient must be a full-time student living in the Hampton Roads area of Virginia and must be a French language major in his or her junior year of study. The scholarship is to be based primarily on academic merit.

\***The Drewry Family Endowed Scholarship** was established in 2004 by William B. Drewry to be given to a declared undergraduate majoring in the College of Arts and Letters. The recipient must be academically average with a grade point average between 2.8 and 3.0. Preference will be given to a student with financial aid. (FAFSA)

\*+**The Friends of Women's Studies Scholarship** is funded by an endowment in honor of Carolyn Rhodes for students majoring in women's studies. Two scholarships are awarded: one to a graduate student seeking an M.A. in humanities and one to an undergraduate student. Undergraduate students must demonstrate financial need and have a minimum grade point average of 3.00. Graduate students must have a minimum grade point average of 3.50. Recipients can be full- or part-time students. (FAFSA)

\***The Ralph and Dorothy Gifuni Endowed Scholarship** was established by Karin Gifuni Zumwalt in honor of her parents. The recipient of this scholarship must be a "first generation" college student, must be enrolled full-time in the College of Arts and Letters majoring in English, must maintain a cumulative GPA of 3.0 or better, and must demonstrate financial need. (FAFSA)

\*+**The Barbara M. Gorlinsky Memorial Fine Arts Scholarship** is made possible by an endowment the Gorlinsky family established in memory of their daughter. It is designed to assist students with financial need who are fine arts majors. Information concerning portfolio requirements is available from the Art Department. (PORTFOLIO, FAFSA) (757) 683-4047

**The L. Cameron Gregory Scholarship in Journalism** was established by Frank Batten, in memory of Mr. Gregory, to assist a full-time undergraduate student majoring in English with an emphasis in journalism. The recipient must also have a cumulative GPA of 3.0.

**The Eva May Morris Gregory Dance Scholarship** honors someone who emulates Ms. Gregory's approach and perspective regarding dance. The recipient must be a rising senior majoring in dance with a minimum 3.00 grade point average.

\***The Ralph Jackson and Clara Jackson Kingsbury Memorial Scholarship Endowment** was established by Dr. Ralph Harrison Jackson in memory of his sister and himself. This endowment is to assist one or more undergraduate junior, senior and graduate student(s) majoring in English

who has a cumulative GPA of 3.0 or better and demonstrates financial need. (FAFSA)

**The Lee and Bernard Jaffe Family Endowed Scholarship Fund** acknowledges excellence in spoken and written communications using the English language. The recipient must be a rising junior or senior with a declared major in English or Communications with a 3.50 grade point average and recommended by the department chair and dean.

**The Jerome J. Kern Music Prize** was made possible by an endowment from the estate of Jerome J. Kern to assist a student who has declared a major in music. The award is determined by the Department of Music and based on academic merit and musical talent.

**The Jerome J. Kern Music Scholarship** was established by William A. Goldback in memory of his uncle. The recipient must be an undergraduate student of exceptional musical ability who is or plans to be a music major. Information concerning audition requirements is available from the Music Department. (AUDITION, PARTICIPATION) (757) 683-4061

**The Wayne Lustig Endowed Scholarship**, established by Mrs. Elaine B. Lustig, assists undergraduate students in the College of Arts and Letters who demonstrate academic merit and participate in one of ODU's intercollegiate athletic programs.

+**The Perry Morgan Fellowship in Creative Writing** established in 2005 by Frank Batten and is awarded to two or more first year full-time graduate students enrolled in the creative writing program. Recipients must maintain a minimum 3.5 GPA.

**The Old Dominion University Dance Program Scholarship** was established to assist a full-time dance major with outstanding ability/potential in dance.

**The James Harrison Parker Scholarship Fund** was established by the Thistle Foundation to assist a student majoring in English with an emphasis in composition. The recipient must be a rising junior and have a minimum cumulative 3.00 grade point average.

\*+**The Harvey Ronald Saunders Memorial Endowed Scholarship** was established by Mr. and Mrs. Louis M. Saunders to assist an undergraduate or graduate student majoring in the arts/fine arts with an emphasis in painting or drawing. The recipient must have a 3.00 minimum grade point average, demonstrate financial need and be a citizen of either the United States or Israel. Information concerning portfolio requirements is available from the Art Department. (PORTFOLIO, FAFSA) (757) 683-4047

+**The Charles K. Sibley Art Scholarship** is funded by an endowment made possible by contributions from the friends and patrons of the former Old Dominion University professor. Awards are to assist graduate or undergraduate students majoring in studio art or art history. Information concerning portfolio requirements is available from the Art Department. (PORTFOLIO) (757) 683-4047

**The Schwetz Scholarship Fund of the Tidewater Jewish Foundation** was established by Ruth F. Schwetz through a bequest in her will to provide a scholarship that will assist a student participating in Hillel at Old Dominion University or a student taking courses in the Jewish Studies major and/or minor.

**The Caroline Heath Tunstall-Elizabeth Calvert Page Dabney Scholarship** is funded by an endowment contributed in honor of two former members of the Old Dominion University English Department. This scholarship is awarded to an upperclassman in the College of Arts and Letters who has obtained at least a 3.50 grade point average.

**The Charles E. and Frieda O. Vogan Music Scholarship** assists undergraduate music students. Information concerning audition requirements is available from the Music Department. (AUDITION, PARTICIPATION) (757) 683-4061

+**The Forrest P. and Edith R. White Endowed Scholarship** Fund was established by Edith R. White to provide scholarships to students studying acting in the Old Dominion University Communication and Theatre Arts Department. (AUDITION)

\*+ **The George William and Jennette Whitehurst Scholarship** was established to assist a student majoring in history with a minimum GPA of 3.0 who has financial need. (FAFSA)

## The Strome College of Business

**The Accounting Alumni Scholarship** was established in 1993 by the Old Dominion University Accounting Alumni. It is awarded to a student who has completed a minimum of 60 semester hours majoring in accounting with a grade point average of 3.00 or above.

**The Agarwal and Yochum Endowed Scholarship** was established by Drs. Vinod Agarwal and Gilbert Yochum to assist an undergraduate student classified as being the best upper-division undergraduate economics major. Preference will be given to the student who is most financially disadvantaged.

\*+**The Jeffrey W. Ainslie Endowed Scholarship in Real Estate** was established in 2006 by Jeffrey W. Ainslie to assist a full-time student in the real estate track in the Strome College of Business. The student must have a grade point average of 3.0 or higher and must demonstrate financial need. Preference will be given to the student with the highest GPA and demonstrating the greatest financial need. (FAFSA)

\***The Bagwell-Jones Endowed Scholarship** was established by Dorothy M. Jones in memory of her parents. The recipient must be a rising senior in the Strome College of Business with the highest grade point average of three prior years at Old Dominion, as well as demonstrate financial need. (FAFSA)

\***The Melissa and Rod Buffington Endowed Scholarship in Finance** was established to assist a full-time female student in the Strome College of Business. The recipient must have a declared major in finance, a cumulative GPA of 3.25 or better, and demonstrate financial need. (FAFSA)

**The Strome College of Business Endowed Study Abroad Scholarship** was established to assist a full-time student in the Strome College of Business. Study abroad opportunity must be ODU sponsored and the recipient must have a minimum 3.0 grade point average.

\***The William R. Conrad Scholarship** was established to assist a full-time undergraduate student in the Strome College of Business who has a cumulative GPA of 3.0 or better. The student must demonstrate financial need. (FAFSA)

**The Constant Dominion Business Scholarship** was established as an endowment by Mr. and Mrs. Theodore F. Constant. The scholars selected will be among the best students selected to enter the University's Strome College of Business. The award will be given to at least two Virginia residents each year.

**The Robert O. Copeland Endowed Scholarship in Real Estate** was established to assist a junior or senior student in the Strome College of Business. The recipient must be a declared major in financial management with an emphasis in real estate and must have a grade point average of 3.0.

\*+**The Larry J. and Elizabeth J. Creef Endowed Scholarship** was established as an endowment to provide a scholarship to a student with an interest in pursuing a career with the Federal Bureau of Investigation (FBI), the CIA, the Department of Homeland Security or other security agency of the U.S. government. The recipient must be a Virginia resident and a U.S. citizen, demonstrate financial need, be a full-time student enrolled in the Strome College of Business and have declared a major in accounting. (FAFSA)

\***The Kim and Keith Curtis Endowed Scholarship** was established to assist a student in the Strome College of Business. The recipient must demonstrate financial need, involvement in campus activities, and possess a GPA of 3.0.

\***The Mark Davis/Atlantic Bay Mortgage Group Memorial Endowed Scholarship in Business** was established by the Atlantic Bay Mortgage Group to assist a full-time rising junior or senior student in the Strome College of Business. The recipient must have a declared major in finance,

real estate track, maintain a cumulative grade point average of 3.0 or better, and demonstrate financial need. (FAFSA)

**\*The Douglas G. and Marianne M. Dickerson Endowed Scholarship in Business** was established by the Douglas G. Dickerson and Marianne M. Dickerson Foundation. The scholarship is awarded to a full-time or part-time undergraduate student who has a declared major in the Strome College of Business and demonstrates financial need with a preference given to students ineligible for the Pell grant. The recipient must have a cumulative GPA of 2.5 to 3.0. The scholarship is renewable. (FAFSA)

**\*The David W. and Rebecca D. Faeder Scholarship** was established by David W. Faeder to assist a full-time undergraduate student in the Strome College of Business. The student must demonstrate evidence of involvement in student activities, have a cumulative GPA of 3.0 or better and demonstrate financial need. (FAFSA)

**The Joan Gifford Scholarship in Real Estate** was established to assist a full-time undergraduate in the Strome College of Business with a real estate track, who has a cumulative GPA of 3.0 or higher.

**The Heymann Family Endowed Scholarship in Accounting** was established to assist a full-time rising senior in the Strome College of Business. The recipient must have a declared major in accounting, a cumulative GPA of 2.5 or higher, and must be a Virginia resident.

**\*The Hunter A. Hogan Scholarship** is funded by an endowment established by Robert M. and Eleanor Stanton and Goodman Segar Hogan Inc. on the occasion of Mr. Hogan's retirement as chair of the firm and in recognition of his leadership in the real estate industry. This scholarship is awarded to one or more students who have demonstrated financial need and are enrolled in the real estate program in the Strome College of Business. (FAFSA)

**+The Jesse and Sue Hughes International Accounting Scholarship** was established to assist a full-time international student in the Strome College of Business who is a declared major in accounting with a focus on public sector financial management. Preference is given to a student at the graduate level.

**\*The Janet L. Hume Scholarship** is funded by an endowment given by Julien Robert Hume III. This scholarship is provided to assist a junior with a declared major in the Strome College of Business who has demonstrated academic merit. Preference is given to a student at least 30 years old who has demonstrated financial need. (FAFSA)

**\*The Dorothy M. Jones Memorial Scholarship** has been given anonymously by a former student to honor Professor Jones, associate professor emerita in the Strome College of Business. This scholarship is awarded to a junior who has declared a major in the Strome College of Business. The student must be a resident of Eastern Virginia, enrolled full time, in good academic standing and demonstrate financial need. Preference is given to graduates of Matthews High School. (FAFSA)

**The Lori E. Kaplan Real Estate Endowed Scholarship** was established in memory and honor of the late Lori E. Kaplan by Harvey Lindsay, Janet Abraham and Roslyn Kaplan and funded by an endowment given by Harvey Lindsay Commercial Real Estate, friends and family of Lori E. Kaplan and the proceeds of the annual Lori Kaplan Memorial Golf Tournament. Preference is given to students with a declared major in financial management or real estate, a minimum 2.75 grade point average, demonstrated interest in the profession of real estate, demonstrated commitment to the community and those currently employed full or part time.

**\* The Larry and Colgate Kittelberger Endowed Scholarship in Business** was established by Larry and Colgate Kittelberger to assist a full-time undergraduate student in the Strome College of Business. The recipient must demonstrate financial need. (FAFSA)

**The Barry M. Kornblau Real Estate Endowed Scholarship** was established by Barry M. Kornblau for a student who is a junior or senior in the Strome College of Business. A major in financial management with an emphasis in real estate and a grade point average of 3.25 are required.

**\*The Gregory Lumsden Endowed Scholarship** was established by Gregory Lumsden in 2005 to assist an undergraduate student in the Strome College of Business working towards a degree in business (B.S.B.A. or B.A. in economics). The scholarship recipient must have a minimum cumulative 3.0 grade point average and must demonstrate evidence of involvement in student activities. Recipient must demonstrate financial need. (FAFSA)

**\*The McLaughlin Family Endowed Scholarship** was established in 2004 by Dennis McLaughlin and The Atlantic Group, Inc. to assist an undergraduate in the Strome College of Business who is a declared management major. The student must have a grade point average of 3.0 or higher, and the selection will be based on demonstrated financial need. (FAFSA)

**\*The Norfolk-Tidewater Chapter of the Society of Financial Service Professionals Scholarship** was established to assist a junior or senior majoring in risk and insurance in the Strome College of Business. The student must be in good academic standing with the University. Preference is given to students who demonstrate a high grade point average, extracurricular activities and financial need. (FAFSA)

**\*+The Tevangudi P. Radhakrishnan Endowed Scholarship** was established by Rajesh Radhakrishnan to assist a full-time international student in the Strome College of Business.

**+The Charles H. and Mary Kathryn Rotert Scholarship** was funded by an endowment established by Mr. and Mrs. Charles H. Rotert Jr. This scholarship is awarded to a deserving student in the Strome College of Business.

**+The Tidewater Association of Service Contractors (TASC) Scholarship** was established to assist a full-time undergraduate or graduate student from the Batten College of Engineering and Technology or the Strome College of Business degree program. A full-time/part-time master's certification in government contracting program or any other certificate program supporting government contracting within the continuing education departments may also be considered. The scholarship recipient must have a minimum grade point average of 3.0.

**\*+The Joseph and Donna Vestal Endowed Scholarship** was established by Joseph Vestal to assist a full-time student in the Strome College of Business who has a GPA of 2.5 or higher and demonstrates financial need. The recipient must also be involved in campus student activities in a leadership program. (FAFSA)

**The Vispo-Torgesen Marketing Scholarship for Upperclassmen** was established by John R. Vispo '72 and Carol T. Vispo '75, graduates of the Strome College of Business with concentrations in marketing management, to establish an endowed scholarship, named in honor of their families. The scholarship recipients must be full-time students, at the junior or senior level, in the Strome College of Business with a concentration in marketing. A strong preference is given to students who intend to join, or are members of, the University's student chapter of The American Marketing Association. Students must maintain a grade point average of 3.0 and exhibit extracurricular service outside of marketing activities such as a part-time employment, an internship, or volunteer work.

**\*+The Rolf Williams Memorial Endowed Scholarship** was established by the Propeller Club of the United States, Port of Norfolk to assist a full-time undergraduate or full-time graduate student in the Strome College of Business. The student must be a rising senior with a declared major in maritime and supply chain management or a graduate student in the Master of Business Administration program with a concentration in maritime, ports, and logistics management. Preference will be given to the student with greatest financial need and at least a minimum cumulative GPA of 3.0. (FAFSA)

**Anne D. Wood Endowed Scholarship** Fund was established by Richard B. Thurmond in 2001 to assist an undergraduate student enrolled in the real estate track in the Strome College of Business. The recipient must have a minimum grade point average of 2.50.

## The Darden College of Education

\*+**The Coca-Cola Scholars Endowed Scholarship Fund** was established by the Coca-Cola Foundation. The scholarship recipient must be enrolled in a financial aid-eligible program leading to teacher certification, licensure, and/or enhancement. Consideration will be given to all students studying at rural Virginia distance learning sites who have a minimum of 58 credit hours with a 3.00 cumulative grade point average. The recipient must also demonstrate financial need. (FAFSA, ESSAY)

+**The Sarah E. Armstrong Scholarship Endowment** was established in 2002 in memory of the donor, Sarah E. Armstrong. The recipient must be a full-time student who has been accepted into the College of Education and must have an overall cumulative 3.2 grade point average.

\***The Peggy Ashford Scott Memorial Endowed Scholarship** was established by Simpson Ashford to assist a full-time undergraduate student majoring in elementary education. The student must have a grade point average of 3.0 or higher and a demonstrated financial need. (FAFSA)

\***The Robert B. Cunningham Endowed Scholarship** was established by Robert B. Cunningham to assist a student enrolled in the Darden College of Education enrolled as a full-time student. The student must demonstrate financial need (FAFSA)

+**The J. Frank Sellew Memorial Scholarship in Education** was established by the friends and family of Mr. Sellew. The recipient must have a GPA of 3.0 and major in any teacher education program. The recipient must also meet all teacher education admission standards established by their program of study and the Darden College of Education.

\*+**The Strong Scholars Program Scholarship** was established by the Hattie M. Strong Foundation to assist students in their final year of study in an approved teacher education program. This scholarship will be awarded to undergraduate students who have exhibited outstanding success and enthusiasm in field experiences prior to the final year of the program OR graduate students whose life experiences prior to enrollment reveal the same traits. Students must have achieved a minimum GPA of 3.0 in the two semesters prior to their final year and must demonstrate financial need. (FAFSA)

**The Dr. A. Rufus and Sara Tonelson Scholarship in Special Education** was established by Dr. Stephen W. and Dr. Louis O. Tonelson in memory of their parents whose lives were dedicated to the education of students. Students must be accepted into the Darden College of Education's special education program, enrolled full time and have a minimum GPA of 3.0.

\***The Jessica Rhea Turner Scholarship in Human Services Counseling** was established by Ulysses Turner to assist a full-time student majoring in human services counseling with a minimum grade point average of 2.5. The recipient must demonstrate financial need. (FAFSA)

\***The Charles P. and Margaret B. Wildermann Endowed Scholarship for Future Teachers** was established by Charles P. Wildermann and the late Margaret B. Wildermann to assist a full-time undergraduate student majoring in English. The student must be accepted into an approved teacher education program as determined by the Darden College of Education and demonstrate financial need. (FAFSA)

## The Frank Batten College of Engineering and Technology

**The American Society of Highway Engineers-Greater Hampton Roads Chapter Scholarship in Engineering (ASHE-GHR)** is awarded to a full-time undergraduate civil engineering student with an emphasis in transportation. The recipient must be a U.S. citizen, a rising junior, and have a minimum cumulative GPA of 3.0.

+**The BBG Incorporated Endowed Scholarship in Engineering** was established by BBG Incorporated for a rising junior or senior majoring in electrical engineering, electrical engineering technology, computer engineering, or computer engineering technology who holds a minimum cumulative GPA of 2.5. The scholarship is also available to a graduate student majoring in electrical engineering or computer engineering with

a minimum cumulative GPA of 3.0. The recipient will also be considered for an engineering cooperative education/intern position with BBG Incorporated.

**The Stanley Blaxton Endowed Engineering Scholarship** was established by the Stanley Blaxton Foundation to assist an undergraduate student majoring in engineering or engineering technology who holds a minimum 2.5 cumulative grade point average, or an undergraduate student enrolled as engineering intended in the Engineering Fundamentals Division with a minimum 3.0 cumulative high school or transfer grade point average. The recipient must be enrolled for at least half-time enrollment or co-op education/intern position. Preference will be given to Disabled Veterans of the United States Armed Forces.

\***The Civil and Environmental Engineering Visiting Council (CEEVC) William M. Boone Memorial Scholarship** is awarded based on both need and merit to a full- or part-time junior civil and environmental engineering student. (FAFSA)

\***The CodeBetter.Com/Devlicio Us Endowed Scholarship in Computer Science** was established by Tiara Dimond and Brendan Tompkins to assist a full-time female undergraduate student majoring in computer science or computer engineering. Student must demonstrate financial need. (FAFSA)

**The Corporate Circle Endowed Scholarship** was established by The Corporate Circle of the Frank Batten College of Engineering and Technology in 2003. Recipients must be rising sophomores with excellent academic credentials and a declared major in either engineering or engineering technology. Preference will be given to someone with membership in one or more of ODU's student engineering societies.

\***The EWA-Joseph B. Vestal Endowed Scholarship** was established by Enterprise Wireless Alliance to assist a full-time student in the third year of study with at least 55 hours completed and a 2.5 grade point average. The recipient must be pursuing a course of study leading to a degree in either electrical engineering technology or information systems management. Preference will be given to a student focusing on a professional career in the expanding universe of wireless applications and/or telecommunications as determined by the submission of a 500 word essay describing the applicant's specific career objectives in the industry. Students must demonstrate financial need. (FAFSA)

\***The Toykea S. Jones Endowed Scholarship in Engineering** was established by Toykea Jones to assist a full-time undergraduate (sophomore or above) majoring in civil engineering, who must have graduated from one of the following high schools in Hampton Roads, VA: Lake Taylor, I.C. Norcom, Norview, Booker T. Washington, Maury, or Granby. Student must demonstrate financial need and must have a minimum GPA of 3.0. (FAFSA)

**The Edgar and Kathleen Kovner Scholarships** provide several one-year scholarships: (a) for continuing engineering students who demonstrate academic achievement and (b) for engineering students who participate in extracurricular activities.

\***The Labelle Endowed Scholarship in Engineering** has been established by William M. Labelle, Jr. to assist a full-time, rising sophomore or junior majoring in electrical and computer engineering. Recipient must demonstrate financial need, be a U.S. citizen and have a GPA of 3.0 or better. (FAFSA)

**The Lewis Endowed Scholarship in Engineering** was established by William Ashton Lewis Sr. and Louise B. Lewis to assist a full-time rising sophomore student majoring in mechanical engineering. The recipient must be a U. S. Citizen or Permanent Resident, must have attained a minimum undergraduate grade point average of 3.0, and must maintain a minimum grade point average of 2.5 to hold the scholarship. The scholarship may be awarded up to three academic years if the recipient maintains at least a 2.5 grade point average.

**The Metts Endowed Scholarship in Engineering** was established by William F. Metts, Jr. to assist a full-time undergraduate in mechanical engineering. The recipient must be a U.S. citizen and have a minimum GPA of 3.0.

\***The Dr. Frankie Gale Moore Endowed Scholarship** has been established by Linda Y. Moore to assist a junior or senior female student majoring in

engineering. The recipient must be enrolled full time, demonstrate financial need, and be a resident of Virginia or have attended a Virginia high school or been home schooled in Virginia. The recipient must be a U.S. citizen and have a GPA of 3.0 or better. (FAFSA)

\***The Clarence Lee Ray Endowed Scholarship** is made possible by an endowment established by Clarence L. Ray, Jr. The scholarship is awarded to a full-time undergraduate student in the Batten College of Engineering and Technology who holds a 3.0 GPA or better. The recipient must demonstrate financial need and be a U.S. citizen. (FAFSA)

+**The Stuart H. Russell Memorial Scholarship** is made possible by an endowment established by the estate of Olive L. Spicer. The scholarship is awarded to a deserving student in the Batten College of Engineering and Technology with particular preference given to a student in the Electrical and Computer Engineering Department with an interest in electronics.

\***The Sue Cotton Smith Endowed Scholarship in Engineering** was established to assist a full-time undergraduate student intending to major in civil and environmental engineering. The recipient must have attained a minimum high school GPA of 3.2, be a U.S. citizen or Permanent Resident, and demonstrate need. The scholarship may be renewed for up to four academic years if the student maintains a 3.0 GPA. (FAFSA)

\***The William D. Stanley Scholarship Fund in Engineering Technology** was established to assist an undergraduate transfer student in engineering technology with 58 or more credits at a two-year institution at the time of matriculation at Old Dominion University and a 3.0 grade point average. Recipient must demonstrate need. (FAFSA)

**The Sumitomo Machinery Corporation of America Endowed Scholarship** is awarded to an undergraduate student enrolled in the Batten College of Engineering and Technology or the Strome College of Business with preference given to students with a minor in Japanese. The recipient will be eligible for a work experience in Japan with the Sumitomo Machinery Corporation. The recipient may be eligible for renewal on a semi-annual basis with the approval of the award committee and the maintenance of a 3.00 grade point average.

**The Brent M. Terres Leadership Memorial Endowed Scholarship** was established by Sigma Nu Fraternity Inc., Eta Chi Chapter ("Sigma Nu") to assist an active member of Sigma Nu. The recipient must be a full-time student, have a minimum cumulative GPA of 2.7, and demonstrate involvement in the community, campus, and fraternity. In the event Sigma Nu may not have an active chapter at ODU, the scholarship must be awarded to a full-time student majoring in computer engineering who has a minimum cumulative GPA of 2.7. The student must also receive a computer engineering faculty recommendation.

\*+**The Clarke and Susan Vetrone Endowed Scholarship** is funded by an endowment established to assist one undergraduate and one graduate student with an intended or declared major in the Batten College of Engineering and Technology. The recipient must be enrolled full time and demonstrate financial need. An undergraduate student must have a minimum GPA of 2.75, and preference will be given to a student with learning disabilities. A graduate student must have a minimum GPA of 3.0. (FAFSA)

**The Virginia Natural Gas Endowed Scholarship in Environmental Engineering** was established by Virginia Natural Gas and the AGL Resources Private Foundation to assist a full-time undergraduate student who has an educational focus in civil and environmental engineering.

**The Virginia Society of Professional Engineers Scholarship**, established in 1991, is awarded to a junior or a senior in the Batten College of Engineering and Technology. The student must have attended high school in Southside Hampton Roads, be active in College of Engineering and Technology clubs and societies and be a U.S. citizen. An essay must be submitted to the Engineering Scholarship Committee. (ESSAY)

\***The Benjamin R. Walker Scholarship in Engineering** was established by Stroud, Pence & Associates, LTD to assist a full-time undergraduate engineering student who meets the qualification to be on the Dean's List, is a rising junior or senior who has completed a minimum of 30 semester credit hours while attending ODU, has declared a major in civil engineering with

a specialization or concentration in structural engineering, and demonstrates financial need. Student must be a U.S. citizen. (FAFSA)

\*+**The Edward L. White Endowed Scholarship** was established by Edward L. White, Jr. and Margaret W. Moore to assist a computer engineering student. The recipient must be a Norfolk resident, have a minimum 3.30 grade point average and demonstrate financial need. (FAFSA)

\*+**The George C. Winslow Scholarship** is made possible by an endowment to assist a graduate or undergraduate student who has demonstrated financial need and has obtained at least a 2.50 grade point average while pursuing a degree in mechanical engineering. (FAFSA)

**The Gordon Webster Zipperer III Endowed Scholarship** was established by the Hampton Roads Chapter of the American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. (HRC-ASHRAE) to promote heating, refrigeration, and air conditioning engineering education at Old Dominion University. The recipient must be a full-time undergraduate student studying mechanical engineering or mechanical engineering technology. The student must have a minimum cumulative GPA of 2.5 and be a rising senior or in the senior year. Preference is given to student membership in the ODU Student Chapter of ASHRAE.

## The College of Health Sciences

\***The Amerigroup Leadership Endowed Scholarship** is made possible by the Amerigroup Corporation. The scholarship is awarded to a student who is enrolled at least half-time as an undergraduate junior or senior in the College of Health Sciences with an interest in nursing. Priority is given to students who have dependent children. The recipient must demonstrate financial need. (FAFSA).

+**The Thomas Charles Auclair ('78) Scholarship** is made possible through an endowment given by Mr. and Mrs. George E. Auclair in memory of their son. The scholarship supports a student pursuing studies in environmental health.

**The Captain Kenneth B. Austin USN and Mrs. Virginia Frank Keller Austin Scholarship for Nursing Students** was established to assist a full-time student with junior status who has been accepted into the School of Nursing. The recipient will be selected based on merit and demonstrated leadership experience.

\***The Dr. Tapan K. Chaudhuri Endowed Scholarship** was established to assist a full-time junior or senior who has been admitted into the Old Dominion University nuclear medicine program. The recipient must demonstrate financial need and have the highest GPA amongst those eligible for the scholarship award. (FAFSA)

\*+**The Chesapeake Regional Medical Center Nursing Endowed Scholarship** was established to assist a full-time undergraduate or graduate student enrolled in Old Dominion University's nursing program. The student must demonstrate financial need and must agree to accept 120 clinical hours at Chesapeake Regional Medical Center, or its successor. (FAFSA)

\*+**The Friends of Dental Hygiene Endowed Scholarship** was established by Mrs. Linda Fox Rohrer in 2004. Recipients must be either full-time graduate or undergraduate students. The scholarship will be awarded to a deserving student in the School of Dental Hygiene. The recipient must also demonstrate financial need. (FAFSA)

\*+**The Gene W. Hirschfeld Scholarship** is supported by an endowment given by the former chair of the Department of Dental Hygiene and Dental Assisting. The scholarship is awarded to undergraduate or graduate students who demonstrate financial need and are enrolled in the dental hygiene program. (FAFSA)

\***The LifeNet Health Medical Technology Endowed Scholarship** was established to assist full-time seniors enrolled in the Old Dominion University medical technology program who possess an interest in microbiology. The recipient must agree to a 1-3 week internship at LifeNet Health or its successor (School of Medical Diagnostic and Translational

Sciences will coordinate/supervise), and the internship must be completed before graduation. The student must demonstrate financial need. (FAFSA)

**\*The Eugene Michael Yura and Eli Petrun Memorial Endowed Scholarship in Nursing** was established by Dr. Helen Yura Petro and Joseph Petro to assist a full-time junior or senior majoring in nursing. The student must demonstrate financial need. (FAFSA)

**\*The Joseph Petro and Helen Yura Petro Endowed Nursing Scholarship** was established to assist a full-time junior or senior admitted into the Old Dominion University undergraduate nursing program. The student must demonstrate financial need. (FAFSA)

**\*The Marilyn Frakes Quinn Endowed Undergraduate Nursing Scholarship** was established by Dr. John Nunnery to assist a full-time junior or senior student enrolled in Old Dominion University's nursing program. The student must demonstrate financial need. (FAFSA)

**\*The TOWN Foundation Scholarship Awards** were established to encourage students with academic ability who lack sufficient financial means to attend the Old Dominion University School of Nursing. Each recipient must meet the normal admission standards of the Old Dominion University School of Nursing and demonstrate substantial financial need. (FAFSA)

**The George and Susan Petro and Michael and Anna Yura Endowed Scholarship** was established by Dr. Helen Yura Petro and Joseph Petro in memory of their parents, George and Susan Petro and Michael and Anna Yura. The scholarship is to be awarded to a full-time senior or junior majoring in nursing, with a minimum GPA of 3.0.

**\*The Lettie Pate Whitehead Nursing Scholarship** is made possible by an endowment given by the Lettie Pate Whitehead Foundation, Inc. It is awarded to deserving females demonstrating financial need. (FAFSA)

## The College of Sciences

**The Clifford L. and Lillian R. Adams Scholarship** is made possible by an endowment established by Mr. and Mrs. Adams. Mr. Adams, the former director of the Research Foundation and department chair, taught in the Department of Physics at Old Dominion University for many years. The scholarship is awarded to a full-time undergraduate with a declared or intended major in physics.

**+The Sarah E. Armstrong Science Scholarship Endowment** was established in 2002 in memory of Sarah E. Armstrong. The recipient must be a full-time student who has been accepted into the College of Sciences and must have an overall cumulative 3.2 grade point average.

**The Robert Bock Memorial Endowed Scholarship Fund** was established by the Bock family to assist a resident of Accomack or Northampton County. The recipient must be a junior or a senior majoring in the biological sciences with a cumulative grade point average of 3.00. Priority is given to residents of Chincoteague.

**\*The CodeBetter.Com/Devlicio Us Endowed Scholarship in Computer Science** was established by Tiara Dimond and Brendan Tompkins to assist a full-time female undergraduate student majoring in computer science or computer engineering. Student must demonstrate financial need. (FAFSA)

**The Nancy Ferguson Frye Award** was established in 1990 by her family and friends. The recipient of the award must be a senior majoring in the geological sciences with a minimum grade point average of 3.25.

**\*The Dr. James M. Kiernan Memorial Endowment** is made possible by an endowment given by Margaret and Charles Wildermann. The scholarship recipient will be chosen based on financial need. The student must be a declared physics, math, or computer science major and have earned at least a 2.5 grade point average. The recipient must be a citizen of the United States. Preference will be given to a junior or senior or a student who transferred to Old Dominion from a community college. (FAFSA)

**The Sree Taposh Kumar and Sreemati Bulu Rani Chowdhury Memorial Scholarship** was established by Dr. Tapan Chaudhuri, Dr. Tuhin Chaudhuri, Dr. Tandra Chaudhuri, Dr. Tarun Chaudhuri, Dr. Triptesh Chaudhuri, Mr. Tanmay Chowdhury, and Mrs. Tripti Bhaduri. The

scholarship will assist a full-time student enrolled in the College of Sciences who is completing the prerequisites for medical school with the intention of working in the field of medicine. The scholarship will be awarded to the student with the highest GPA of the pool of potential recipients.

**+The Nick Savage Scholarship** was established by Anne Raymond Savage to assist a full-time undergraduate or graduate student majoring in an area of science that involves field work and the study of plant life. Preference will be given to a student who is entering or returning to the field of teaching science. Students must maintain a grade point average of 3.0.

**The Science Museum of Eastern Virginia Prize** was established by the Science Museum Association of Eastern Virginia in 1998. The award is given to one or more junior students majoring in biology, chemistry, computer science, geology, math, oceanography, physics or psychology. The recipient(s) must have at least a 3.25 grade point average.

**\*The A. Kenneth Scribner Science Scholarships** are made possible by the family of the late Mr. Scribner, former president of Virginia Chemicals, Inc. and a former member of the Old Dominion University Board of Visitors. Established in 1978, the scholarships assist students majoring in science or a science-related field who have demonstrated financial need and show capability and industry in scientific studies. Preference is given to graduates of Hampton Roads public schools. (FAFSA)

**The C. S. Sherwood III Scholarship** is made possible by an endowment from the family and friends of the late Calder S. Sherwood, III, and former professor emeritus at Old Dominion University. This scholarship is to assist one rising senior majoring in either geology or chemistry (on an alternating basis).

**The Elzie Glenn Whitlock Endowed Scholarship in Math** is funded by an endowment established by Elzie Glenn Whitlock to assist a student who will be enrolled full time with a declared major in math. The recipient must have a GPA of 3.0 or higher.

## The Honors College

**The Honors College Scholarships** are awarded to a select group of entering freshman who, on the basis of their academic achievement, are chosen to participate in the program. The scholarship may be renewed for three years (six semesters) provided students continue to meet program participation standards. Recipients are selected by the Dean of the Honors College (Separate Application Required: <http://www.odu.edu/honors>) (PARTICIPATION) (757) 683-4865

**The Brock Foundation Endowed Honors Scholarship** was established by The Brock Foundation to assist students enrolled in the Honors College. The recipients must be juniors or rising seniors in good standing in the Honors College and willing to volunteer with ACCESS.

**The Cranmer-Skinner Scholarships** are funded through an endowment established by Mr. and Mrs. Jay G. Cranmer in recognition of the contributions to the University by Dr. Richard Skinner, first director of the Honors College. They are awarded to Honors College participants whose academic performance, extracurricular activities and potential for leadership exemplify ideals of scholarship, personal integrity and citizenship. The endowment also provides financial support to bring prominent persons to campus to interact with the honors students. (PARTICIPATION)

## Military Awards

**Army Reserve Officer Training Corps (AROTC)** participants may qualify for scholarships. More information on application procedures and program requirements is available from the faculty of the Department of Military Science and Leadership. (PARTICIPATION) (757) 683-3663

**Naval Reserve Officer Training Corps (NROTC)** participants may qualify for full or partial scholarships. More information on application procedures and program requirements is available from the faculty of the Department of Naval Science. (PARTICIPATION) (757) 683-4744

**The Vice Admiral Samuel L. Gravely Scholarship** has been established by the University to honor a member of the naval community. Two recipients will be selected by the Hampton Roads Naval ROTC unit from among the



College Program Candidates who have met the July 15 application deadline. The recipients must be full-time students with 3.00 minimum high school grade point averages and 1000/22 SAT/ACT test scores.

\*+**The Lucille D. Thompson Memorial Scholarship** is sponsored by the American Legion Women's Post No. 118. The scholarship is awarded to an honorably discharged veteran who demonstrates financial need. (FAFSA)

\***The Theodore N. Turley Memorial Scholarship** assists an Army ROTC participant with financial need who has achieved junior status and has obtained a minimum 3.00 cumulative grade point average at the end of the first semester of the junior year. (PARTICIPATION, FAFSA)

**The Matthew Wallace Patriot Scholarship** was established to assist incoming freshman students who may be a relative of a United States service man or woman (Army, Air Force, Navy, Marines) wounded or deceased (KIA) or related to a service member who participated in Operation Iraqi and Enduring Freedom or any future operation thereafter. The scholarship is renewable. The recipient must be in good academic standing, enrolled at least half time and maintain at least a 2.5 GPA. A 500 word essay, based on a specific topic determined by the scholarship selection committee, is required. (Essay) (757) 683- 3663

## Other Awards (General)

+**The Bannon Foundation Quasi-Endowed Scholarship** was established to assist four students of the Eastern Shore of Virginia with their commuter expenses.

+**Birshtein Family Scholarship Endowment** was established by Ms. Frances Levy Birshstein. Two scholarships per year will be awarded, The Mayer Isaac 'Easy' Birshstein Scholarship and The Oscar Brandeis Birshstein and Frances Levy Birshstein Scholarship. Recipients must be undergraduate students who have graduated from a high school in Norfolk, Portsmouth or Virginia Beach, have a cumulative grade point average between 3.00 and 3.50 and demonstrate financial need. (FAFSA)

\***The Opie and Peggy Bittle Memorial Endowment** was established in 2001 by Charles and Margaret Bittle Wildermann to assist a student who demonstrates financial need. (FAFSA)

\*+**The John R. Burton Jr. Scholarship** is made possible by an endowment to assist students who demonstrate financial need. Preference is shown to high school graduates who have been reared in the Hope Haven Children's Home. (FAFSA)

\*+**The Robert Claytor Memorial Scholarship** is funded by an endowment from the friends of Robert Claytor for a student who demonstrates financial need, according to federal needs analysis. (FAFSA)

**The Coalition of Black Faculty and Administrators' Endowed Scholarship** is funded by an endowment established by the Coalition of Black Faculty and Administrators to assist a student who is a graduate of one of the following high schools in Hampton Roads, VA; I. C. Norcom, Hampton, Bethel, Maury, Indian River, Norview, Booker T. Washington, Oscar Smith, Kecoughtan, Granby, Deep Creek, Menchville, Salem, Denbigh, Tallwood, Lake Taylor, Bayside, Phoebus, Western Branch, Churchland, Ocean Lakes, Kempsville, Great Bridge, Princess Anne, and Green Run. The recipient must be a full-time undergraduate or graduate student and must have an overall GPA of at least 2.5. An essay submission of 500 words is required. The essay topic is the student's commitment and/or involvement in the black community on or off campus.

\***The Delta Sigma Lambda Glenn Burns Scholarship** is supported by an endowment which assists female undergraduate students 25 years or older who have attended college for a minimum of one year. Delta Sigma Lambda members are eligible for the award. Preference is given to students who demonstrate financial need. Students must complete a separate application, which may be obtained from the Old Dominion University Women's Center. (SPECIAL APPLICATION, FAFSA) (757) 683-4109

**The Ellis Family Endowed Scholarship** was established by Janet A. and John C. Ellis to assist a high school graduate of a Hampton Roads high school. The recipient must be an undergraduate student of good character

with financial need. Preference will be given to individuals who participated in the Tidewater ACCESS or Learning Bridge programs.

\***The Holland Dunston Ellis Jr. Memorial Scholarship** has been established through an endowment gift from Mrs. Lavonne P. Ellis in memory of her husband. The award is to assist a continuing student who is a Virginia resident from either I.C. Norcom or Booker T. Washington High Schools. The recipient must also have a cumulative GPA of 3.0 and demonstrate evidence of community service activities and/or achievement. The recipient must demonstrate financial need. (FAFSA)

+**The Charles H. Eure Memorial Scholarship** is awarded to a marine science or engineering student who has a 3.00 grade point average and is of sound moral character. Preference will be given to a STASR (South Tidewater Association of Ship Repairers) company family member.

\***The Suffridge-Fallon Endowed Scholarship** was established by Patrick J. Fallon and Sandra S. Fallon to assist a full-time student with a minimum GPA of 3.0. The recipient must demonstrate financial need. (FAFSA)

**The Anita Clair Fellman Endowed Service Learning Scholarship** is funded by an endowment established by Dr. Carolyn H. Rhodes to assist one or more full-time graduate or undergraduate students who participate in a service-learning project through the Department of Women's Studies. The recipient will be selected by the chair of the Women's Studies Department and another faculty member in the department.

\***The Hackworth-Hobbs Endowed Scholarship** was established by Dorothy and Charles Hackworth and Charles Hackworth II to assist an undergraduate student with a minimum 3.2 grade point average who demonstrates need and has participated in student activities and non-paid volunteer community activities. (FAFSA)

\***The Haislip-Rorrer Scholarship** was established in 2001 by Wallace G. and Linda Haislip. The undergraduate scholarship recipient must demonstrate financial need and leadership experiences, be a resident of the Southside of Hampton Roads and have a minimum 3.00 grade point average. (FAFSA)

\***The Martin Luther King Jr. Endowed Scholarship** was established in 1987 by an anonymous donor to be given to a graduate of one of the following high schools: Lake Taylor, I.C. Norcom, Norview, Booker T. Washington, Maury or Granby. The recipient must have completed 60 academic credit hours with a major in the Batten College of Engineering and Technology or the Department of Accounting and demonstrate financial need. (FAFSA)

\***The R.K.T. "Kit" Larson Scholarship** is made possible by an endowment established in memory of Mr. Larson by his friends and colleagues of The Virginian-Pilot newspaper. The scholarship is awarded to a junior or senior with financial need who is enrolled full-time and works on a school, community or University publication. Recipient must be a resident of a Virginia or North Carolina city or county served by The Virginian-Pilot. (FAFSA)

\*+**The Lillian Vernon Endowed Scholarship** is funded by an endowment from the Lillian Vernon Foundation. It is awarded to a spouse, child, or grandchild of an active Lillian Vernon employee. Recipient must have a minimum grade point average of 2.80 and demonstrate financial need. (FAFSA)

\***The Aubrey and Lucille Machen Scholarship** is made possible by an endowment established in 1992 by Robert F. and Nancy M. Wildermann. The award assists a student who meets Old Dominion University's minimum academic requirements and has financial need. (FAFSA)

+**The Memorial and Recognition Scholarship Fund** is an endowed scholarship that will be awarded to a student with a minimum grade point average of 3.00 and is able to demonstrate involvement in community service.

+**The Steve Russell Morrison Memorial Endowed Scholarship** has been established by the family and friends of Steve Russell Morrison and the Epsilon Beta Chapter of Kappa Delta Rho. This scholarship is awarded to a rising sophomore demonstrating leadership and involvement in campus

and community affairs. Preference is given to active members of the Epsilon Beta Chapter of Kappa Delta Rho. (ESSAY)

**\*The Norfolk Southern Scholars Program** was implemented by the Norfolk Southern Foundation for students from the Lambert's Point neighborhood of Norfolk. It is awarded to students who have successfully completed the Lambert's Point Summer Program, are admitted to Old Dominion University and demonstrate financial need. It is renewable for a maximum of three additional years. (FAFSA)

**The Old Dominion University Alumni Association Adam Thoroughgood Scholarship** was established in 2002 to assist a full-time undergraduate student. The recipient must demonstrate strong leadership skills, proven volunteer activities within the community, and a minimum grade point average of 3.0. (INTERVIEW, ESSAY)

**The Old Dominion University Faculty Emeriti Association Scholarship** is made possible by an endowment established by the organization. This scholarship assists full-time undergraduate students entering their junior year of study, who have high academic credentials. Preference is given to dependent children of current Old Dominion University faculty and faculty administrators.

**\*The Old Dominion University Faculty Wives and Friends Scholarship** is awarded to a woman at least 25 years old who is attending college after an absence of at least a year. The award assists a student who demonstrates merit and financial need. (FAFSA)

**The Parents' Association of Old Dominion University Continuing Student Scholarship** is provided by the association to assist a continuing student who demonstrates academic merit.

**\*The James Harrison Parker Memorial Endowed Scholarship** was established for the purpose of providing student educational assistance. The recipient must be a junior or senior degree candidate in environmental engineering, coastal engineering, oceanography or biological sciences. The student must demonstrate financial need and have a minimum grade point average of 3.00. Preference may be given to a student who has been active in the local Boys and Girls Club. (FAFSA)

**+\* The Propeller Club of Norfolk** was established by the Propeller Club of the United States, Port of Norfolk. First preference for this scholarship will be given to students who are a current or former Merchant Mariner or the son or daughter of a current or former Merchant Mariner. The recipient must be a full time student in any field of study leading to a degree, have at least a 3.0 grade point average, and demonstrate financial need. The recipient must provide reasonable documentation to verify Merchant Mariner relationship or qualification. (FAFSA & submit reasonable documentation to the Office of Student Financial Aid)

**\*The Alfred B. Rollins Jr. Scholarship** was established in 1985 by the Old Dominion University Alumni Association to honor this former president of the University. The award assists a student who demonstrates financial need and is in his/her senior year of study. (FAFSA)

**\*The C.S. Sherwood/Portsmouth Community Trust Scholarship** was established by the Distribution Committee of The Portsmouth Community Trust. Recipients must be graduates of a Portsmouth, Virginia public high school in the upper 20 percent of their graduating class, be of good character and demonstrate financial need. (FAFSA)

**+\*The Sherwood/Portsmouth Scholarships** are funded annually by a trust established by the late Calder Sherwood III, a professor emeritus in the departments of Chemical Sciences and Physics/Geophysical Sciences. Professor Sherwood served on the Old Dominion University faculty for 38 years. The scholarships are awarded to graduates of public high schools in Portsmouth, Virginia who demonstrate financial need. (FAFSA)

**The John and Grace Staley Memorial Scholarships** are made possible by an endowment from the estate of Grace Staley to assist one male and one female student who successfully completes the University Ladders program. The recipients must have an advisor's recommendation.

**The Brent M. Terres Leadership Memorial Endowed Scholarship** was established by Sigma Nu Fraternity Inc., Eta Chi Chapter ("Sigma

Nu") to assist an active member of Sigma Nu. The recipient must be a full-time student, have a minimum cumulative GPA of 2.7, and demonstrate involvement in the community, campus, and fraternity. In the event Sigma Nu may not have an active chapter at ODU, the scholarship must be awarded to a full-time student majoring in computer engineering who has a minimum cumulative GPA of 2.7. The student must also receive a computer engineering faculty recommendation.

**+The Town-N-Gown Scholarship** has been established by Town-N-Gown, an association dedicated to promoting cooperation between the Hampton Roads community and the University in order to promote better understanding in fulfilling the aims and ideals of each. The scholarship recipient rotates annually from the following: (1) resident of the greater Hampton Roads area, (2) a member of or dependent of active duty military personnel and (3) a dependent of an Old Dominion University faculty or staff member.

**\*The Hugh L. Vaughan Scholarship** has been established by an endowment to assist handicapped students. Preference is given to blind students. Recipients must be native-born Virginians.

**\*The Verlander Foundation Endowed Scholarship** was established by the George W. Verlander and Cornelia M. Verlander Memorial Foundation to assist students who reside or are a dependent of a resident of Lancaster County, Virginia. Students must be full-time undergraduates who maintain a minimum GPA of 2.5, and must demonstrate financial need. (FAFSA)

**\*The Wells Fargo Endowed Scholarship** assists an undergraduate student who is a Virginia resident and demonstrates financial need. First preference is given to a student from Lambert's Point neighborhood, second preference is given to a student from the neighborhoods surrounding the Old Dominion University campus, and the third preference to a student from the Hampton Roads area. (FAFSA)

**+\*The E. C. Wareheim Foundation "Returning Women's" Scholarship** has been established by an endowment to assist one or more returning women from Norfolk, Virginia Beach, Portsmouth, Chesapeake or Suffolk who have demonstrated financial need. Preference is given to students who enroll part-time. (FAFSA)

**The Lewis and Lisa Warren Endowed Student Internship** was established to provide the opportunity for outstanding students to receive a scholarship financing career-oriented work experience, as a supplement to their academic education. The recipient must be a junior or senior majoring in natural sciences or creative arts.

**The Lewis and Virginia Webb Jr. Scholarship** was established in 1975 by the Old Dominion University Alumni Association to honor this former president of the University and his wife. It is awarded to the rising junior with the highest grade point average at the end of his/her sophomore year of study.

**+\*The Jane L. and Robert H. Weiner International Affairs Scholarship** is made possible through an endowment established by Mr. and Mrs. Weiner to assist a student who will be studying abroad through the International Student Exchange Program (ISEP). Preference will be given to students who will study in a third world or developing country for the purpose of fostering international understanding and peace and who demonstrate academic achievement and financial need. (FAFSA)

**+\*The Calvert S. Whitehurst Scholarship** is funded by an endowment established by Mr. Robert B. Kendall and augmented by the Whitehurst Scholars Scholarship Foundation. The endowment recognizes the contribution of both Mr. Calvert S. Whitehurst and his son, Professor G. William Whitehurst, former member of the U.S. Congress. The scholarship is awarded to a student with financial need who demonstrates academic potential. (FAFSA)

**\*The Friends of Dr. G. William Whitehurst Scholarship** is to be awarded to an undergraduate student with a minimum grade point average of 3.0 who is eligible for the Federal Pell Grant. (FAFSA)

**\*The Fritz and Marcy Wildermann Scholarship** was established in 1980 by Mr. and Mrs. Robert F. Wildermann to assist a student who meets Old

Dominion University's minimum academic requirements and has financial need. (FAFSA)

**\*The Robert F. and Nancy M. Wildermann Endowed Scholarship** was established by an endowment in 2001 by Nancy M. Wildermann. The scholarship will be awarded to a full-time student who demonstrates eligibility to receive the Federal Pell Grant. The recipient must have a grade point average between 2.5 and 2.75 (FAFSA)

**The Frieda Young Science and Engineering Prize** is awarded annually to a female with the highest grade point average who is a rising junior in either the Frank Batten College of Engineering and Technology or the College of Sciences. Some restrictions on majors do apply within each college and the recipient must be a U.S. citizen.

**\*The Kiwanis Club of Suburban Norfolk Endowed Scholarship** was established by the Kiwanis Club of Suburban Norfolk to assist a full-time student demonstrating good citizenship and financial need. The recipient must be a citizen of the United States or eligible non-citizen. Preference will be given to a student who was a member of Key Club in high school, active in community service in high school, or active in community service as a student at Old Dominion University. (FAFSA)

## Other Financial Aid Resources

**\*The GATS, Inc. Endowed Scholarship** has been established by the GATS Charity Fund to assist a full-time freshman student majoring in the sciences, engineering, math, or computer science. The recipient must have a high school GPA of 3.0 or higher and demonstrate financial need. (FAFSA)

**+The Parker Lesley Endowed Fund** has been established for students who demonstrate need for special circumstances. Special circumstances are defined as emergency travel, supplies, equipment, etc. (ESSAY) (757) 683-5524

**\*The Emily and Christine Maria Grant Endowment** was established by Helen Clark, executor of the Christine Maria estate, on behalf of the late Christine A. Maria and her sister Emily to assist full-time undergraduate students who participate in student leadership activities as defined by the Office of Leadership and Student Involvement. Students must demonstrate financial need and preference is given to students majoring in music or science. (FAFSA)

**The George Wilcox Kirby, Jr. Scholarship** was established by George Wilcox Kirby Jr. Scholarship preference will be given for internship scholarships to attend The Washington Center.

**The Prabhav Maniyar International Exchange Program Scholarship** was established to assist a full-time international student with particular preference to students from the nation of Kenya and the Sudan. Recipient must maintain a cumulative grade point average of 3.0 or better.

**The Donald K. Marchand Sigma Nu Endowed Scholarship** was established by Darden Watkins Jones, Jr. and Richard R. Early to assist undergraduate or graduate student(s) who are enrolled full-time or part-time, have a minimum cumulative GPA of 2.7, and who demonstrate involvement in the community, campus and fraternity. Preference will be given to active members of Sigma Nu Fraternity.

**+The Monarch Athletic Bands Endowed Scholarship** was established by the Old Dominion University Educational Foundation. The recipient(s) must be a full-time undergraduate or graduate student, successfully complete an audition, and maintain a minimum GPA of 2.5 for an undergraduate student or minimum GPA of 3.0 for a graduate student.

**The ODU Credit Union Scholarship** has been established for members of the ODU Credit Union or their dependents. The applicant must be an admitted Old Dominion University student in good standing or a candidate with worthy credentials. An application, transcripts, and a short (250 word) essay are required. (757) 533-9308.

**The C. Donald Porter Endowed Scholarship in Music** was established by Retail Alliance in honor of its former President C. Donald Porter. The scholarship recipient must be enrolled as a full-time undergraduate student

majoring in music with a concentration in piano. The student must also maintain a cumulative GPA of 3.0 or better.

**+The James Stamos Scholarships** in Voice and Piano are made possible by a bequest from Mr. Stamos to assist several students who are majoring in either voice or piano. Information concerning audition requirements is available from the Music Department. Contact the chair of the department. (AUDITION) (757) 683-4061

**+The Student Activities Scholarships** in music are awarded to students who participate in one or more Music Department activities including concert choir, band, orchestra, Madrigal Singers and brass choir. Information concerning audition requirements is available from the Music Department. Contact the chair of the department. (AUDITION, PARTICIPATION) (757) 683-4061

**+The Viburnum Acting Endowed Scholarship Fund** was established by the Viburnum Foundation to provide monetary awards to acting students. (AUDITION)

**The Melvin H. Williams Scholarship for Exercise Science** was established to assist a student in the exercise science program in the Department of Human Movement Sciences. The recipient must be a rising senior, enrolled full time, and have at least a 3.0 cumulative GPA.

## Veterans and Dependents Benefits

Information about the administration of education assistance under the Veterans Administration may be obtained from the VA website: [www.vba.va.gov](http://www.vba.va.gov). Students wishing to use their VA benefits at Old Dominion University may find further information on the University Registrar's web page: <http://www.odu.edu/military/students/veterans-services>.

Contact the Office of the University Registrar for further assistance:  
phone: 757 683-4425  
FAX: 757 683-5357  
email to [vaservices@odu.edu](mailto:vaservices@odu.edu).

## Termination of Aid

Failure to remain in good academic standing will result in automatic withdrawal of financial aid by the University. Failure to comply with the conditions of a financial award will cause its termination and the return of any unexpended funds as well as repayment, in some cases, of funds already utilized. Undergraduate-specific endowed scholarships will be withdrawn immediately for the term in which an undergraduate student advances to an admitted graduate student status.

## Financial Aid for Graduate Students

For information on financial aid for graduate students and graduate assistantship guidelines, refer to the Graduate Catalog (<http://catalog.odu.edu/graduate>).

# Registration Requirements

## Office of the University Registrar

The Office of the University Registrar provides a wide variety of student services, including registration, verification of enrollment, maintenance of student records and academic history, transcripts, degree certification and diplomas. A calendar of important dates, the examination schedule, and information about various policies and procedures is available at [www.odu.edu/registrar](http://www.odu.edu/registrar).

The Office of the University Registrar also is responsible for determining in-state tuition status, athletic eligibility and registration of students enrolling through the Virginia Tidewater Consortium.

Finally, the Office of the University Registrar provides service to military veterans who are attending the University by processing Veterans Affairs paperwork. Complete information is available to veterans on the Registrar's Office website as well as on the Veterans Administration website [www.gibill.va.gov](http://www.gibill.va.gov) (<http://www.gibill.va.gov>).

Self-service is available for most processes online at [www.leeonline.odu.edu](http://www.leeonline.odu.edu). On the Norfolk campus, walk-up services are available at the office in 116 Alfred B. Rollins, Jr. Hall. Additionally, many services are available at the higher education centers and the distance learning sites located throughout the Commonwealth of Virginia. The office is open Monday-Friday from 8 a.m.-5 p.m. Please call 757-683-4425.

## Academic Calendar and Course Scheduling

The academic calendar includes the fall and spring semesters, as well as the summer term. The fall semester begins one or two weeks prior to Labor Day Weekend and ends 16 weeks later. Classes will be held on Saturday and Sunday of Labor Day weekend, but classes are canceled for the Labor Day holiday. A Fall Break is scheduled for mid-October (Columbus Day Weekend) and runs from Saturday through Tuesday of that weekend. Thanksgiving break begins after classes on Tuesday prior to the holiday, and classes resume on the following Monday. Commencement is scheduled on the Saturday after exams have been administered.

Spring semester begins one week prior to the Martin Luther King holiday weekend. Classes are canceled for MLK weekend (Saturday-Monday) and resume on Tuesday following the holiday. Spring Break is scheduled eight weeks after the start of classes, from Monday through Saturday. Classes resume on the following Sunday and continue until Monday of week 15 into the semester. A reading day is held the Tuesday after classes end, with exams beginning on Wednesday and continuing to the following Wednesday. Commencement is scheduled on the Friday and Saturday after exams have been administered; Saturday is the degree conferral date.

Summer term includes one 12-week session and two six-week sessions from mid-May to mid-August.

Note: Asynchronous courses may or may not follow these terms. The University will determine the duration of each course, and students may opt for self-paced study, based on the concept of anytime/anyplace learning.

## Audit Status

The audit grading status is available for students who would like to enroll in a course for the knowledge gained or personal satisfaction, not for academic credit. Any course that is elected to be carried as an audit will be subject to the normal fees and regulations of the University. Regular attendance is expected, but neither tests nor examinations are required. No grade will be recorded, except that an instructor may assign a grade of W& to a student who misses an appreciable portion of the classes. The student's record will be marked "audit" by the course so elected. A student may not audit a course and subsequently seek advanced placement credit for the same course. A student may audit a course and register for the same course for credit in a subsequent semester. Any course elected for audit cannot be changed to that of credit status after the end of the "add" registration period. Registration

for the audit option must be selected by the end of the drop/add period in the given semester. Students receiving financial aid should be aware that registering for audit status may affect their financial aid eligibility. Selection of the audit status is accomplished through the normal registration procedures.

## Classification of Undergraduate Students

A sophomore must have completed 30 semester hours. A junior must have completed 60 semester hours. A senior must have completed 90 semester hours.

Transfer students will receive classifications based upon credit hours accepted by Old Dominion University.

Classification of students will be determined at the end of each semester.

## Course Numbering

Courses in which the leading number is zero, e.g. 050, are non-degree credit courses primarily in developmental studies.

Courses numbered 100 are primarily for freshmen, 200 for sophomores, 300 for juniors, and 400 for seniors. All 300- and 400-level courses require junior standing or permission of the instructor.

Courses at the 500, 600, 700, and 800 levels are generally for graduate credit. Courses at the 500 level correspond to undergraduate 400-level courses; however, a different grading scale is used for 500-level registrants. Additional and higher quality work is required in 500-level courses. A limited number of 500-level courses may be used to satisfy the requirements for a master's degree. Courses at the 600 level are the mainstay of master's programs and are not linked to numbers at other levels. A limited number of 600-level courses may be used to satisfy the requirements for a doctoral degree. 700- and 800-level courses are generally, but not always, linked. 700-level courses are generally for advanced master's students, and 800-level courses are generally for doctoral students. Higher-level outcomes are required for 800-level courses.

At least three-fifths of the course work for a master's degree must be completed at the 600 and higher levels, and at least three-fifths of the course work for a doctoral degree must be completed at the 800 level. However, some programs have instituted more stringent requirements.

General Education undergraduate courses are designated by the fourth digit in the course number. At the lower division, the following designations are used: for skills courses, C=Composition, F=Language and Culture, G=Information Literacy and Research, M=Mathematics and R=Oral Communication; for Ways of Knowing courses, A=Human Creativity, H=Interpreting the Past, L=Literature, P and E=Philosophy and Ethics, N=the Nature of Science, S=Human Behavior and T=Impact of Technology. Writing intensive courses are designated by a W in the fourth digit.

Topics course numbers include 195, 196, 295, 296, 395, 396, 495, 496, 595, 596, 695, 696, 795, 796, 895, and 896. These numbers are generally to be used to designate topics courses taught as a class. The particular topic for that semester should be listed in the semester schedule. Where a particular topic is offered more than two or three times, it should be approved as a regular course offering and given its own course number.

Individual and Tutorial course numbers include 397, 398, 497, 498, 597, 697, 797, and 897. These numbers are generally to be used to designate courses involving individual or tutorial study within a discipline. These individually arranged courses will require prior approval by the department chair and/or instructor.

Cooperative Education course numbers are 367, 667, and 867.

Internship course numbers are generally 368, 668, and 868.

Practicum course numbers are generally 369, 669, and 869.

Extracurricular Activities course numbers are 377 and 378. These numbers are reserved for departments interested in granting credit for extracurricular activities at the undergraduate level.

Honors course numbers include 126, 127, 128, 226, 227, 228, 387, 388, 487, and 488. These numbers are reserved for departments interested in offering honors courses at the undergraduate level.

Seminar, Colloquium, and Capstone course numbers include 690, 691, 692, 693, 890, 891, 892 and 893.

Research/Project course numbers are generally 698 for the master's level and 898 for the doctoral level.

The Thesis course number is 699 and is reserved for the master's thesis.

The Dissertation course number is 899 and is reserved for doctoral dissertation courses.

The Continuous Enrollment course number 999 is available for the purpose of maintaining active status at the doctoral level. This may be a discipline-specific 999 course or GRAD 999. All students are required to be enrolled the semester in which they graduate, and all doctoral students who have advanced to candidacy are required to be registered for at least one graduate credit hour each term (fall, spring, and summer) until the degree is completed.

Once a course number has been deactivated it may not be reused for a different course for a period of six academic years.

## Declaration or Change of Major or Minor for Undergraduate Students

Upon entrance to the University, students are assigned either to an advisor in the Center for Major Exploration or to an advisor in their college or department of interest. Distant students work with the site director or distance learning representative as their main advisor, with a college advisor on campus assigned as the final authority. Acceptance of a student for advising purposes does not guarantee acceptance into the department as a major. Acceptance of a student as a major in a program cannot occur until all requirements for acceptance have been met. These requirements vary depending upon the major. Specific inquiries concerning requirements should be made to the academic college, school or department involved, or the site director or distance learning representative. In all cases a student must successfully complete ENGL 110C before declaring a major.

A student must be accepted as a major in an academic program before the student may become a degree candidate or apply for graduation. Students cannot receive a degree in an academic program unless they have met all requirements for acceptance and have been accepted into that academic program. Students should declare their major by the time they earn between 45-60 credit hours in order to meet requirements of their intended major in a timely manner. Non-degree students may not declare majors until admitted to degree status.

Students must contact the department of the intended major or their site director or distance learning representative to formally declare a major. Upon meeting the University, college, and departmental/school requirements for declaring the major and/or minor, the academic advisor, site director, or distance learning representative in the interest area will officially declare the major and/or minor on the student's behalf.

## Graduate Credit for Old Dominion University Undergraduates

### Undergraduate Students Enrolled in Accelerated Degree Programs

Students enrolled in accelerated degree programs at Old Dominion University, approved by the provost and listed below, may take up to 21 hours of graduate credit that may be applied toward the undergraduate degree. Of these 21 hours of graduate credit, up to 12 can be applied toward both the undergraduate and graduate degrees, with this option being available only to those students who have satisfied all admission and continuation requirements of the specific accelerated programs. All graduate hours applied to the undergraduate degree will be counted in the undergraduate grade point average, appear on the undergraduate transcript, and be used to determine graduation with honors. Students in accelerated

degree programs will be formally admitted to the graduate program following receipt of the baccalaureate degree.

Approved accelerated bachelor's to master's degree programs are as follows:

- Bachelor of Arts or Bachelor of Science to Master of Business Administration
- Bachelor's in Communication to Master of Arts in Humanities
- Bachelor's in Communication to Master of Arts in Lifespan and Digital Communication
- Bachelor of Arts in English to Master of Arts in English
- Bachelor of Arts in English to Master of Arts in Applied Linguistics
- Bachelor of Arts in History to Master of Arts in History
- Bachelor's in Interdisciplinary Studies (Individualized Integrative Studies) to Master of Arts in Humanities
- Bachelor of Arts in International Studies to Master of Arts in International Studies
- Bachelor of Arts in Philosophy to Master of Arts in Humanities
- Bachelor's in Women's Studies to Master of Arts in Humanities
- Bachelor's in Engineering or Technology to Master's in Engineering
- Bachelor's in Engineering or Technology to Ph.D. in Engineering
- Bachelor of Science in Business Administration to Master of Business Administration
- Bachelor of Science in Dental Hygiene to Master of Science in Dental Hygiene
- Bachelor of Science in Environmental Health to Master of Public Health
- Bachelor of Science in Health Sciences to Master of Public Health
- Bachelor of Science in Computer Science to Master of Science in Computer Science

## Undergraduate Students with Senior Standing but not Enrolled in Programs with an Accelerated Degree Option

An Old Dominion University undergraduate degree-seeking student with senior standing and a 3.30 or better grade point average in the major field of study may be allowed to take up to 12 hours of graduate course work for graduate credit, upon approval of the instructor of the graduate course, the chair and graduate program director of the department offering the graduate course, and the chair or chief departmental advisor of the student's undergraduate major department. Up to six hours of graduate credit taken prior to completing the undergraduate degree may be applied toward the undergraduate degree. The graduate credit may be used as a substitution for required undergraduate courses only with the approval of the department chair or chief departmental advisor of the student's undergraduate program. All graduate hours applied to the undergraduate degree will be counted in the undergraduate grade point average, appear on the undergraduate transcript, and be used to determine graduation with honors. The combined undergraduate and graduate hours taken during any semester must not exceed 18. The proper request form, Request of Old Dominion University Undergraduate to Take Graduate Courses, is available in the Office of the University Registrar. This option is not open to undergraduate students with senior standing at institutions other than Old Dominion University.

## Degree Completion (Graduation) Application

Undergraduate students who have earned at least 102 credits and met other minimal requirements will be reminded via email to the ODU email address to begin the review process and to apply for graduation if eligible.

All students must apply for graduation during the semester prior to the expected completion of degree requirements. The deadline to file the intent to graduate is generally the last day of November, February and June for the following semester. Complete instructions and specific deadlines are published on the Registrar's Office website, [www.odu.edu/registrar](http://www.odu.edu/registrar). Students can apply online at LEO online or use the electronic form available on the Registrar's Office website.

Qualified students should access and download a current copy of the DegreeWorks degree evaluation from [my.odu.edu](http://my.odu.edu) and consult with the academic advisor or site director prior to submission of the application for graduation to ensure that degree requirements are being met. After meeting with the academic advisor and verifying eligibility for graduation, students should submit the application for graduation.

Students who have elected a minor must consult a representative in the minor department to ensure that minor requirements are being met.

Students pursuing two degrees simultaneously should submit a single graduation application listing both degrees. The student's advisors will submit separate degree certifications for each program directly to the Office of the University Registrar.

Students can view their application and degree status in LEO Online, [www.leonline.odu.edu](http://www.leonline.odu.edu). Once the application has been processed, the student's graduation status appears as "pending." The status changes to "awarded" once the degree is conferred. At peak times, coding can take up to four weeks following submission of the application.

Students who do not complete degree requirements as expected must reapply for the next graduation date.

## Graduation Clearance

All degree requirements must be completed no later than the last day of exams for the term in which graduation is anticipated. Students who are attending classes at other institutions should ensure that the course(s) and examination(s) taken at the other institution will be completed no later than the day prior to the date of expected commencement at Old Dominion University. In addition to departmental academic requirements specific to the major, minor, concentration or degree program, prior to conferral of the degree, undergraduate students must complete the senior assessment (survey) and meet the University's undergraduate writing program requirement, which is completion of the following courses with a grade of C (2.0) or better: ENGL 110C, ENGL 211C or ENGL 221C or ENGL 231C, and the writing intensive (W) course in the major. Students should also refer to the sections of this Catalog on Overall Requirements for Baccalaureate Degrees and Additional Requirements for Baccalaureate Degrees.

Students are responsible for monitoring their own progress toward degree completion and for meeting all graduation requirements. Students are encouraged to monitor the following specific University requirements: General education, foreign language, transfer work evaluation, and upper-level requirements. Students are also reminded that academic advising in the major department is extremely important to the successful completion of the degree being sought.

## Commencement

Commencement exercises are intended for students who are eligible and reasonably expect to complete degree requirements, graduating from the University within the current or next graduation period.

Commencement ceremonies are managed through the Office of University Events. Information about requirements for participation in commencement ceremonies, the on-line application process for tickets, academic regalia, schedule of events, etc., will be posted to [www.odu.edu/commencement](http://www.odu.edu/commencement). To be eligible to participate in ceremonies, candidates must register for commencement ceremonies according to deadlines posted by the Office of University Events.

Participation in May commencement ceremonies is limited to candidates for May graduation and students who expect to complete studies in the upcoming August. Participation in December commencement ceremonies is limited to candidates for December graduation and graduates from the preceding August.

Students who expect to attend commencement ceremonies must have applied for graduation in order to be coded by the Registrar's Office as "pending" for graduation; otherwise, tickets will not be provided by the Commencement Office. With the exception of doctoral candidates, all students participating in commencement ceremonies remain pending for

graduation until the record is evaluated and the degree is conferred, up to four weeks, excluding University holidays, following the date of the commencement ceremony. With the exception of doctoral graduates, diplomas are not distributed at commencement.

Participation in commencement ceremonies does not confirm that a degree has been (or will be) conferred.

## Completion of Requirements for Undergraduate Students (Catalog Year)

Undergraduate students may choose to graduate under the Catalog in effect at the time of their first enrollment (part-time or full-time) or any subsequent Catalog provided that the students graduate within six years from the date of the first enrollment. For example, students beginning in the fall 2014 semester may use any Catalog in effect from fall 2014 through the end of the 2020 summer term, students beginning in spring 2015 may use any Catalog in effect from spring 2015 through the end of the fall 2020 semester, and students beginning in summer 2015 may use any Catalog in effect from summer 2015 through the spring 2021 semester. If students do not graduate within this six-year period, they may choose to graduate under any Catalog in effect within the six-year period preceding the date of graduation. For example, students graduating in spring 2015 may use any Catalog in effect from summer 2009 through spring 2015, students graduating in summer 2015 may use any Catalog in effect from fall 2009 through summer 2015, and students graduating in fall 2015 may use any Catalog in effect from spring 2010 through fall 2015.

In all cases, students must have been duly admitted to the University and an academic program of study and meet all of the requirements for graduation in one catalog. Students may not "tailor make" their own degree requirements by selecting partial requirements from more than one catalog.

## Diplomas

Diplomas are mailed to the student's permanent address after the degree has been posted. Diplomas will be mailed beginning in June for May graduates, in September for August graduates and in January for December graduates. Diplomas will be mailed as students are cleared for graduation and will continue until all diplomas are distributed. Students can verify posting of degrees and other information at [www.leonline.odu.edu](http://www.leonline.odu.edu). Diplomas are mailed to the current active address in the student system. Students should verify address information in LEO when applying for graduation.

All holds, debts or other obligations to the University must be satisfied before the diploma will be released. Information about holds can be viewed at [www.leonline.odu.edu](http://www.leonline.odu.edu).

The student's legal name (as maintained in the student system) and the degree title (Bachelor of Arts, Bachelor of Science, etc.) appear on the diploma. For a complete listing of degrees, please refer to the "Synopsis of Degree Programs" <http://catalog.odu.edu/undergraduate/degreeprograms/> in this catalog. The student's major does not appear on the diploma, but is published on the transcript.

## Graduation with Honors

### Baccalaureate Degrees

Baccalaureate degrees with honors are conferred in accordance with the following cumulative grade point averages on work attempted at Old Dominion University:

Honors	Minimum Number of Credit Hours	Minimum Number of Grade-Point Graded Hours
Cum Laude 3.4-3.65	60	54
Magna Cum Laude 3.66-3.85	60	54
Summa Cum Laude 3.86-4.00	60	54

These designations apply only to candidates who have completed 60 or more credit hours of work at Old Dominion University. At least 54 of the hours

must be in grade-point graded courses. Honors designations will be posted to students' records and appear on the diploma.

Candidates who transfer to Old Dominion and thus do not qualify for honors designations because they have not completed 60 hours at Old Dominion University but who have 45 or more graded hours at Old Dominion University with a cumulative grade point average of 3.66 or higher will be recognized as graduates with distinction. This information will be posted to students' records and appear on the diploma.

To determine eligibility for graduation with honors or with distinction, the student's complete record, including grades and hours for courses that have been forgiven using grade forgiveness or adjusted through the Adjusted Resident Credit policy, will be evaluated to calculate the final grade point average. If the student's overall average is sufficient, graduation with honors or with distinction will be posted to the student's record and appear on the diploma.

Credit earned under the Experiential Learning credit options (advanced placement, University exams, departmental exams, external exams such as CLEP and DANES, portfolio review, and training) does not apply to the 60 credit hours required for graduation with honors or the 45 hours required for graduation with distinction.

For students in approved accelerated degree programs, all graduate hours applied to the undergraduate degree will be counted in the undergraduate grade point average, appear on the undergraduate transcript, and be used to determine graduation with honors.

## Departmental Honors

Undergraduate students may earn the designation of departmental honors on their diplomas. Minimum University standards for departmental honors are:

- Minimum cumulative GPA of 3.25.
- Minimum GPA in the major of 3.50.
- Completion of at least two 300- or 400-level courses designated by the department to be honors courses.
- Completion of at least 60 credit hours at Old Dominion University, 54 of which must be in grade-point graded courses.

Undergraduate students who meet all the criteria for departmental honors except the credit-hour requirement may earn the designation of with distinction on their diplomas with the completion of a minimum of 45 graded hours at Old Dominion University.

Candidates who have used grade forgiveness or adjusted resident credit should be aware that the enhanced grade point average determined by use of these procedures does not determine eligibility for departmental honors. To determine eligibility for departmental honors, the student's complete record, including grades and hours for courses that have been forgiven or adjusted, will be evaluated to calculate the final grade point average. If the student's overall average is sufficient, departmental honors will be posted to the student's record.

Credit earned under the Experiential Learning credit options (advanced placement, University exams, departmental exams, external exams such as CLEP and DANES, portfolio review, and training) does not apply to the 45 credit hours required for departmental honors.

For students in approved accelerated degree programs, all graduate hours applied to the undergraduate degree will be counted in the undergraduate grade point average, appear on the undergraduate transcript, and be used to determine departmental honors.

Individual departments may set other eligibility standards in addition to the University standards. Interested students should contact the Honors College for more information.

## Contract Honors Courses

Students with a grade point average of at least 3.25 may transform any upper-division course into an Honors course on an individual basis. With the advice and consent of the instructor, students take one or more courses that can be converted into Honors. No grade below B is accepted for Honors

designation. In addition, contract honors courses may be used to meet requirements for departmental honors. Interested students should contact the Honors College for additional information.

## Normal Course Load for Undergraduate Students

The University considers the carrying of 12 or more credit hours during the fall and spring semesters to be full time for undergraduate students; 15 hours is considered a normal course load. Students seeking to enroll in more than 18 credit hours must have a 3.00 or better overall grade point average. In addition, they must obtain the recommendation of their advisor and written permission from the dean of the college in which their major program resides. Students without a declared major must obtain the recommendation of their advisor and written permission from the Executive Director of Advising and Transfer Programs to enroll in more than 18 credit hours. A student on academic warning may not enroll in more than 14 credits per semester of attendance, except under extenuating circumstances and with the permission of the dean or designee of the college in which the student is enrolled. A student on academic probation may not enroll in more than 14 credits per semester of attendance. Otherwise, the actual course load is entirely the prerogative of the student.

During the summer term, an undergraduate student is considered to be full time if he or she is enrolled in nine hours. A student may not enroll in more than nine hours in a six-week session. A student on academic warning or academic probation may not enroll in more than six credits in the summer term and no more than one course in any single summer session. No student may enroll in more than 15 hours during the summer term without the recommendation of the advisor and written permission from the dean of the college in which the major program resides. Students without a declared major must obtain the recommendation of their advisor and written permission from the Executive Director of Advising and Transfer Programs.

## Priority Preregistration for Active Duty, Veterans, Reservists and Virginia National Guard Service Members

The 2012 General Assembly established Virginia code 23-9.2:3.7 C, which states:

The governing boards of each public institution of higher education shall, in accordance with guidelines developed by the State Council of Higher Education for Virginia, implement policies that recognize the scheduling difficulties and obligations encountered by active duty members of the United States armed forces.

The State Council of Higher Education for Virginia in consultation with the Military Education Advisory Committee (MEAC) has issued guidelines that require state colleges and universities to establish course registration policies that provide reasonable accommodation to students who are active-duty military members, veterans, reservists and Virginia National Guard members.

Old Dominion University wishes to facilitate priority preregistration for currently enrolled, degree-seeking military students according to the following procedures:

- **Priority preregistration** will begin no sooner than Monday of the first week of preregistration provided documentation has been received and approved in the Office of the University Registrar.
- **Preregistration will be based on the student's class standing** (senior, junior, sophomore, freshman) and will permit the student to participate during the earliest registration time slot for his or her class. Time tickets will be assigned using rules to assign the appropriate time slot. All graduate students are invited to register on the first day of preregistration.

To qualify for priority preregistration:

- **Active Duty, Reservist and National Guard students** must provide proof of current active duty status to the Office of the University

Registrar prior to preregistration each semester. With valid Military ID, students will be granted a priority registration time slot.

- **Veterans receiving federal VA educational benefits** to include but not limited to Chapter 30, Chapter 31, Chapter 32, Chapter 33, Chapter 1606 and Chapter 1607 will automatically receive priority preregistration if benefits have been received at Old Dominion University during the current semester (for example, priority preregistration will be granted if the student has submitted the benefits certification form for the spring semester and wishes to preregister for the fall semester).
  - **GI Bill benefits recipients** who have submitted the Veterans Clearance form to the Office of the University Registrar by the deadline will be granted a priority window registration time slot. The VA Clearance Form is available at: <http://www.odu.edu/content/dam/odu/offices/university-registrar1/docs/veterans-clearance-form.pdf>
- **Veterans who do not use federal VA educational benefits** must provide a copy of the DD214, retired military identification card or the DMV issued veteran card.
- **In order to participate in priority preregistration**, students who are qualified must self-identify as indicated and provide requested documentation by the following deadlines:
  - **Fall preregistration: March 15**
    - Generally fall preregistration will begin no later than the second week of April for currently enrolled degree seeking students.
  - **Spring/Summer preregistration: October 15**
    - Generally, spring preregistration will begin no later than the second week of November for currently enrolled degree seeking students. Summer preregistration is ongoing and concurrent with spring preregistration.

All students must have been advised, have no restrictive holds on the student account and be otherwise eligible to register in order to participate in preregistration. Entering freshman students may register during their Preview orientation date.

Each semester all documents should be mailed or delivered to the Veterans Certifying Officer, Office of the University Registrar, 116 Rollins Hall, Norfolk, VA 23529 or faxed to 757-683-5357. The VA Certifying Officer is responsible for all requests regarding priority preregistration.

Communication about the priority preregistration process will be published in the University Catalogs, available online on the Veterans Services pages <http://www.odu.edu/military/students/veterans-services>, and through direct communication via email to the ODU email address to all currently qualified and enrolled students.

Staff in the Office of the University Registrar, Military Connections and the Office of Admissions will be trained to communicate the policy to students who may be qualified for this benefit.

-Approved by the Board of Visitors

## Registration

There are several registration options available to students: registration via the web at [my.odu.edu](http://my.odu.edu), click LEO online, in person, on-campus registration, and off-campus registration.

Eligible students are encouraged to preregister in order to improve the likelihood of obtaining satisfactory schedules of classes. Preregistration is reserved for currently enrolled degree-seeking students. Eligible students will be assigned a "time ticket" four to six weeks prior to preregistration. Open registration begins immediately following the preregistration period.

Complete registration information, important deadlines and the final examination schedule can be found at [www.odu.edu/registrar](http://www.odu.edu/registrar). The course schedule is available at [www.leonline.odu.edu](http://www.leonline.odu.edu) March 7 for summer and fall semester classes and by October 7 for spring semester classes.

## Class Schedule Changes and Drop/Add Procedures

During the fall and spring semesters, students may drop classes within the first 11 calendar days after the first day of classes for the semester and may add classes up to 11 calendar days after the first day of classes for the semester (for full semester classes). This is normally the Tuesday following Labor Day for the fall semester and the Tuesday following the Martin Luther King holiday for the spring semester.

Once registered, a student must drop or add classes via the secure website at [my.odu.edu](http://my.odu.edu), click LEO online or submit a completed drop/add form to the Office of the University Registrar or to the distance site office (for distance students). The date the form is received in the Office of the University Registrar, the distance site office or processed via LEO determines tuition adjustments, if applicable. If needed, drop/add forms can be downloaded from the Registrar's Office website: [www.odu.edu/registrar](http://www.odu.edu/registrar).

Freshmen are strongly encouraged to seek advising before dropping or adding any class. Students enrolled in degree programs in which sequencing is critical are urged to consult their academic advisors before scheduling changes. In such programs, dropping of courses without prior consultation with academic advisors may necessitate additional time to complete University and/or departmental degree requirements.

See the academic calendar in this Catalog or [www.odu.edu/registrar](http://www.odu.edu/registrar) and click on the link to "calendars" for the dates for adding or dropping classes. For information regarding the refund schedule, see the chapter on Tuition, Fees and Financial Information or go to the Office of Finance's web page [www.odu.edu/af/finance](http://www.odu.edu/af/finance).

## Attendance at Other Institutions

Students who are enrolled at Old Dominion University may attend another institution and transfer credit earned there back to a degree program at Old Dominion University. While formal Old Dominion University permission is not required, students should consult the academic advisor to ensure that the credits to be taken at the other institution will transfer to the Old Dominion University program in which the student is enrolled. A complete list of transferable courses that have already been evaluated can be found on the University's home page by searching for Monarch Transformation. If deemed equivalent and the student has earned at least a grade of "C," courses will appear on the Old Dominion University transcript as transfer credit and can be used for general education, major or minor requirements or elective credit. No grade points or hours are calculated into the Old Dominion University grade point average; only hours awarded count toward the total number of credits required for the degree. An official transcript from the other institution must be mailed directly to: Office of Undergraduate Admissions, 108 Rollins Hall, Norfolk, VA 23529.

The other institution may ask the student to provide documentation of good standing or eligibility to continue at Old Dominion. These forms should be submitted to the Office of the University Registrar. Forms that require the student to demonstrate that the course(s) will be accepted for transfer credit at Old Dominion University should be submitted directly to the academic advisor.

It is recommended that students not enroll in courses at another institution during the semester the student intends to graduate.

## Academic Common Market

Old Dominion University, through a number of its undergraduate and graduate programs, participates in the Southern Regional Education Board's Academic Common Market. Eligible residents of participating states may enroll (following admission to degree status) as Academic Common Market students at in-state tuition rates.

The Office of the University Registrar coordinates Academic Common Market participation with the coordinator for each state participating in the Southern Regional Education Board. Students must apply through the home state and supply a letter documenting admission and the intended major. That letter is provided through the Office of the University Registrar. The home state coordinator will approve participation to the Office of



the University Registrar following review of the student's documents. Information on available programs can be viewed at <http://www.schev.edu/students/acmvainstable.asp>.

## Virginia Tidewater Consortium Exchange Program

Old Dominion University students may also take courses at any of the following Consortium institutions: Christopher Newport University (Newport News), College of William and Mary (Williamsburg) (graduate courses only), Eastern Shore Community College (Melfa), Eastern Virginia Medical School (Norfolk), Hampton University (Hampton), Joint Forces Staff College (Norfolk), Norfolk State University (Norfolk), Paul D. Camp Community College (Franklin), Regent University (Virginia Beach), Thomas Nelson Community College (Hampton), Tidewater Community College (all campuses), and Virginia Wesleyan College (Norfolk).

Cross-registration is subject to the following regulations:

1. Cross-registration is limited to degree-seeking students with cumulative grade point averages of 2.00 or better.
2. Cross-registration credit is limited to 30 semester hours.
3. Cross-registration in major courses requires the permission of the department chair.
4. Cross-registration is limited to courses not available to students at the home institution during the current semester. Exceptions to this requirement must be made by the chair of the department offering the course.

For further information, contact the Office of the University Registrar, Alfred B. Rollins Jr. Hall.

## Student-Elected Pass/Fail Course Option For Undergraduate Students

1. The option to select courses for pass/fail credit is open to the undergraduate student who has been accepted by a department as a major.
2. Courses within the student's major or minor, or courses necessary to meet a departmental, school, or college requirement, or University General Education Requirement, may not be taken under this option.
3. A maximum of 12 hours of student-elected pass/fail credit may be applied to the student's baccalaureate degree unless in teacher education programs. Majors in teacher education programs may apply only three hours of student-elected pass/fail credit.
4. Instructors will have knowledge of which students in their courses are enrolled for pass/fail credit.
5. A student receiving a P will receive credit for the hours, but will not receive grade points, and the hours will not be counted in the computation of the grade point average. A student receiving an F will not receive credit for the course and there will be no penalty, although the failure will appear on his or her transcript.
6. A student electing the pass/fail option for a particular course cannot change his or her registration and elect to take the course for grade point credit after the end of the "add" period. Similarly, courses cannot be elected as pass/fail after the end of the "add" period.
7. All prerequisites must be met for any course taken under the pass/fail option.

## Summer Term

Old Dominion University offers a summer program that includes one 12-week and two six-week class sessions, starting in the middle of May and ending in the middle of August. The exact dates are listed on the Registrar's Office website at [www.odu.edu/registrar](http://www.odu.edu/registrar). More than 1,550 graduate and undergraduate courses are offered on campus, off campus and online during the summer months.

## Transcripts

Transcripts are provided by the Office of the University Registrar and are issued only upon the written request of the student or upon submission through the secure website at [my.odu.edu](http://my.odu.edu) (click on link to LEO Online and then student records and then transcripts). They should be requested at least five business days before the date needed to allow for processing and delivery. Students picking up transcripts must present valid identification.

No transcripts will be issued if the student has an outstanding debt at the University. All grades, academic standing, degrees received, and degree honors are included on the transcript.

An official transcript carries the University Seal and an authorized signature. Official transcripts are usually mailed directly to educational institutions, employers, etc. Any transcript mailed to or given directly to a student will be marked, "Issued to Student." Partial transcripts are not issued; each transcript must include the student's complete record at Old Dominion University. A transcript of work completed at any high school or at any college other than Old Dominion University must be obtained directly from that institution.

There is a charge of \$5.00 for each transcript issued. Additional fees are charged for expedited delivery services. Students may access and print unofficial transcripts for personal use through [my.odu.edu](http://my.odu.edu), click LEO online or [www.leonline.odu.edu](http://www.leonline.odu.edu) at no charge.

## Withdrawal From Classes or From the University

### Policy for Dropping and Withdrawing From Classes Dropping Classes

Prior to the start of and during the first 11 calendar days of the semester, a student may drop a course; this means no grade will be assigned and no reference entered on the student's permanent academic record. Please refer to [www.odu.edu/registrar](http://www.odu.edu/registrar) and click on the link to "calendars" for the dates to drop classes in nonsemester courses.

### Withdrawal from Classes

After the first 11 calendar days of the semester, a student may withdraw from any course through the end of the tenth week of a regular semester. Please refer to [www.odu.edu/registrar](http://www.odu.edu/registrar) and click on the link to "calendars" for the dates to withdraw from classes in nonsemester courses. A grade of W will be assigned during this period. Students who withdraw through the end of the tenth week are encouraged to contact their instructor, advisor, site director, or distance learning representative, and financial aid counselor to discuss the implications of withdrawing.

Withdrawal from a course after the tenth week of a regular session (or its equivalent in a nonsemester course) is usually not permitted. However, in the event of an illness or other severe hardship beyond the student's control, the student should submit, no later than the last day of classes, a written petition for permission to withdraw to the instructor and the chair of the department offering the course. If permission is granted by both, a grade of W will be recorded. If permission is not granted by both, the student will not be allowed to withdraw from the course. Any appeal of decisions should be brought to the dean of the college offering the course.

A student who stops attending classes without withdrawing from the course will receive a grade of WF, except if the student's performance was an F at the time the student stopped attending class, in which case a grade of F will be assigned. The grade of WF will carry no grade points, and will be computed in the grade point average as a grade of F.

Prior to withdrawing from any course, students receiving financial aid should consult the Office of Financial Aid counselor. Course withdrawal may adversely impact satisfactory academic progress for financial aid purposes and limit the student's ability to continue receiving financial aid.

## Drop and Withdrawal Deadlines

Specific deadline dates for dropping and withdrawing from classes are found at the Registrar's Office website, [www.odu.edu/registrar](http://www.odu.edu/registrar), by clicking on the link to "calendars."

## Administrative Withdrawal From the University

During the course of any semester, there will be situations, such as severe illness, death in the immediate family, or disciplinary actions, which will require that the University initiate an administrative withdrawal from the University to assist a student or to implement a University-imposed sanction. The following procedures will be used.

1. The request for withdrawal is initiated either by the student because of an extenuating personal situation or by the University because of a disciplinary situation.
2. This action will normally be handled by the Vice President for Student Engagement and Enrollment Services or designee. If the student initiates the withdrawal, the Office of the Vice President for Student Engagement and Enrollment Services will determine what verification is necessary and document the situation.
3. A request will be submitted to the Office of the University Registrar to withdraw the student from all classes.
4. The student's instructors will be notified. If the student is withdrawing after the last day to withdraw from classes without penalty, part of this notification will include the opportunity for the faculty member to raise objections if the student's classroom performance is such that a withdrawal (W) would not be appropriate. If a faculty member objects, the faculty member will inform the University Registrar and the student will receive an "F" in the class.
5. The request for withdrawal must be initiated by the student within one calendar year counting from the first day of classes of the term for which administrative withdrawal is sought. Requests for withdrawal that have the necessary documentation but are received after the one-year deadline may be reviewed by an appeals committee consisting of at least three members and including both faculty and administrators, to be convened by the Student Ombudsperson in Student Engagement and Enrollment Services. These requests must include clear and convincing evidence explaining the student's inability to submit the request within one calendar year.
6. Tuition refund appeals are handled separately and must be submitted to the Office of Finance. Students submitting requests after the one-year deadline are not eligible for a tuition appeal.
7. Students receiving financial aid should consult their financial aid counselor prior to submitting a tuition refund appeal.

## Sudden Withdrawal and Prolonged Absence Due to Military Mobilization

The following guidelines are provided for students whose service in the uniformed services has required their sudden withdrawal or prolonged absence from enrollment at Old Dominion University.

The following definitions are provided in connection with these guidelines:

- "Service in the uniformed services" means service (whether voluntary or involuntary) on active duty in the Armed Forces, including such service by a member of the National Guard or Reserve, for a period of more than 30 days under call or order to active duty of more than 30 days.
- "Tuition" means the actual price of education charged to a student for the term in which service in the uniformed services caused his or her sudden withdrawal or prolonged absence from enrollment at a Virginia institution of higher education.
- "Reinstatement" means the readmittance and reenrollment of a student whose service in the uniformed services has caused his or her sudden withdrawal or prolonged absence from enrollment.
- "Sudden withdrawal" means leaving an institution after a semester has begun or after the tuition and required fees for a term have already been billed to or paid by the student.

## Policies and Procedures

All active duty military students who are unable to complete course requirements due to change in employment duties, work schedule or deployment to a duty assignment may be administratively withdrawn from current semester courses. Students are required to furnish a copy of their military orders to the Office of the University Registrar. Upon receipt of the copy of military orders, the student will be withdrawn from all courses and refund of tuition will be processed following an audit of the student's account and returned to the appropriate party. In addition, the University Registrar will notify the following offices so that additional refunds can be processed as appropriate: Housing and Residence Life, University Card Center, Parking Services, and Old Dominion University Bookstore. Students who are deployed while actively attending the University should make an effort to notify the University Registrar as soon as possible so that records can be updated, providing a copy of military orders or verification of a new duty assignment.

### University Housing and Dining Services

Upon notification by the University Registrar, the Executive Director of Office of Housing and Residence Life will authorize a refund based on prorated charges for the semester calculated on the days in residence. If the student is deployed prior to the start of the semester, but has made a formal commitment for University housing, the student will be released from the housing agreement without penalty and the deposit will be fully refunded.

### Dining/Monarch Plus Card/Parking Services

Upon notification by the University Registrar, prorated refunds will be made for partially used meal plans. Funds remaining on the Monarch Plus card will be refunded to the student. Refund of payment for a parking decal will be prorated based on percentage of use.

### Textbooks

Upon notification by the University Registrar, the Old Dominion University Bookstore will allow for full refunds/and or exchanges of textbooks for any student called to official active military duty as long as the book is in resaleable condition.

### Deposits for Admission

Freshman students who are new applicants for admission to the University but who have not registered for classes may receive either a refund of the admission deposit or defer admission up to one year by submitting a request to the Office of Admissions.

### Preview Fee

Students who have paid but have not attended Preview will receive full refund of the fee.

### Academic Credit

If the student has begun attending classes and sufficient time has passed in the semester, the incomplete grade policy may apply.

A grade of Incomplete (I) indicates assigned work yet to be completed in a given course or absence from the final examination and is assigned only upon instructor approval of a student request. The I grade may be awarded only in exceptional circumstances beyond the student's control, such as illness, and only after 80% of the time allocated for the course has elapsed and substantial progress has been made toward completion of course requirements with the exception of courses that do not fit within the traditional semester calendar. In cases of exceptional circumstances beyond the student's control, it is the responsibility of the student to approach the instructor to request an I grade and to provide documentation, including a written statement of when the work will be completed, to support the request. The authority to award an I grade rests with the instructor whose decision is final. Students whose requests for I grades are approved must not re-register for the class until the I grade has been resolved. The I grade becomes an F if not removed through the last day of classes of the following term (excluding the exam period) according to the following schedule: I grades from the fall semester become F's if not removed by the last day of classes of the spring semester; I grades from the spring semester and the summer session become F's if not removed by the last day of classes of

the fall semester. An I grade may be changed to a W only in very unusual circumstances and when the student's situation has changed since the I grade was awarded. In these cases, the request for a change to a W must be in writing, documented, and approved by the instructor, department chair and dean. Students will not be allowed to graduate until all grades of I have been resolved.

In the case of courses that do not fit within the traditional semester calendar, the faculty member assigns the I grade. The time periods for the removal of I grades before they become grades of F are the same as those stated in the previous paragraph.

Extension of the I time limitation normally will not be approved except for reasons beyond the student's control and only if the supervising faculty member is available and willing to supervise the work beyond the normal time limit. Students should submit the request to the instructor, who should submit approval, via the chair, to the University Registrar in order to retain the I. The approval from the instructor should designate the expiration date of the extension.

If the student is unable to complete the incomplete grade because of prolonged deployment the student should provide justification and documentation directly to the course instructor. At the instructor's discretion, the course instructor can authorize the University Registrar to administratively withdraw the student using this policy. The student will be withdrawn from the course, a grade W will be posted to the academic record and refund of tuition to the appropriate party will be processed. If the instructor is no longer employed at the University, the student should consult the department chair. In the event of a disagreement about a grade, the normal grade appeal process described in the University Catalogs will apply.

Students who are administratively withdrawn from the University under this policy are strongly encouraged to maintain contact with the University through the Office of Student Engagement and Enrollment Services.

Students who are called to active duty during an academic semester who have completed 75 percent of the course requirements at the time of activation and who meet other specified requirements also have the option to accept the grade earned to date. It is the responsibility of the student to provide a copy of the military orders to the Office of the University Registrar. The Registrar will provide documentation to the instructor in support of the student's request to receive the grade earned to date.

### **Reinstatement**

As soon as plans are made, returning students should contact the Office of Admissions to verify their student status and to reactivate their record, if necessary, prior to re-enrolling in classes. Students who leave the University in good standing remain eligible to re-enroll. A student who has left the University for more than a year must complete a reactivation/readmission form available on the Office of Admissions web site. If the separation from the University was longer than five years, the applicant will need to resubmit all official transcripts and necessary credentials. There are no additional fees if the student has previously paid the admission fee.

Students who return following a prolonged absence due to military deployment should be aware of the time limits for Catalog election.

### **Undergraduate Return to Program**

It is presumed the undergraduate student will remain eligible to return to the same program of study. The student should contact the chief departmental advisor for the major if returning to the same program of study. The content of some programs may require that the student repeat previously passed courses to maintain currency in the field.

If the program of study is no longer available for any reason, the student should seek the assistance of the academic advising unit in Academic Enhancement and access the degree evaluation system, available online as DegreeWorks, to determine a suitable alternative major.

### **Undergraduate Time Limits**

Undergraduate students may choose to graduate under the Catalog in effect at the time of their first enrollment (part-time or full-time) or any subsequent

Catalog provided that the students graduate within six years from the date of the first enrollment. Students who have prolonged deployment may be required to elect a more recent Catalog or the Catalog in effect at the term of re-enrollment at the University. Returning students should consult their academic advisors to verify the correct Catalog for graduation purposes. Students should refer to their "general student record" in LEO Online to verify the Catalog selected at the date of first enrollment. The Catalog "year" begins with the fall semester each year.

In all cases, students must have been duly admitted to the University and an academic program of study and meet all of the requirements for graduation in one Catalog. Students may not "tailor make" their own degree requirements by selecting partial requirements from more than one Catalog.

The Office of the University Registrar will maintain records of administrative withdrawals completed under this policy.

-Approved by the Board of Visitors

# Academic Information, Resources and Policies

## Academic Enhancement

Located in the Student Success Center, Academic Enhancement supports student learning in the classroom through programs, resources, and services that introduce and promote college-level learning from first-year through graduation. Services include tutoring, mentoring, academic coaching, supplemental instruction, testing services, and writing for college success. For information about additional resources at Old Dominion, visit <http://www.odu.edu/ao/successcenter/>.

## Academic Advising for Undergraduate Students

<http://www.odu.edu/success/academic/advising>

All degree-seeking undergraduate students must meet with an advisor each semester to discuss future academic and career goals as well as course selection for the next term. A hold is placed on each student's account on April 1 and November 1 to prevent registration until the student and advisor meet. Students are encouraged to talk with their advisors frequently throughout the year, rather than only during registration time periods. The advisor may, at her or his discretion, remove the registration hold for several semesters after the student has developed a long range degree plan.

Acceptance of a student for advising purposes does not guarantee acceptance into the department as a major. In most instances, students begin their academic planning and advising by meeting with an advisor in one of the chosen college's advising center (<http://www.odu.edu/success/academic/advising/centers>). Upon successful completion of prerequisite courses, students must officially declare the major and be accepted by the department as a major by submitting the appropriate application or meeting with the chief departmental advisor (<http://www.odu.edu/success/academic/advising/advisors>). (<http://www.odu.edu/ao/registrar/graduation/candidates/advisors.shtml>)

The executive director of advising and transfer programs in Academic Affairs (located in the Student Success Center (<http://www.odu.edu/advisingprograms>)) directs the undergraduate advising system through the college advising center (<http://www.odu.edu/success/academic/advising/centers>) directors, associate deans, the chief departmental advisors (<http://www.odu.edu/success/academic/advising/advisors>) (CDAs), faculty advisors, the Center for Major Exploration (<http://ww2.odu.edu/ao/cme>), and the director of advising services for Distance Learning, in coordination with the Career Management Center (<http://www.odu.edu/cmc>).

### Academic Advising Centers

All undergraduate, degree-seeking students are assigned to an advisor in a college advising center (<http://www.odu.edu/success/academic/advising/centers>), based on the planned academic program, or to the Center for Major Exploration (<http://ww2.odu.edu/ao/cme/index.shtml>) during the initial term of enrollment. On-campus first year students will meet with the advisor during Preview Orientation (<http://www.odu.edu/preview>), which is required of all freshmen students and campus freshmen-level transfers. All Strome College of Business students, including on-campus transfer students, are required to attend Preview. All transfer students are encouraged to attend Preview, in addition to participating in the online transfer orientation. Students who are undecided on a program of study or interested in exploring majors offered at Old Dominion University should schedule an appointment at the Center for Major Exploration (<http://www.odu.edu/ao/cme/index.shtml>) (CME) in 1500 Webb Center. In addition, students who begin their studies in an academic college may become exploratory and utilize CME for major exploration advising. All other on-campus students who have decided on a major should see an advisor in the academic college advising office during the first semester of enrollment. Students will be assigned to a faculty advisor after the freshman year or upon completion of prerequisite courses for the major. Distance Learning students, regardless of major decision, should consult with a site director (<http://dl.odu.edu/locations>) for advising purposes. Any off-campus

students in online programs or not affiliated with a distance learning site should consult with a campus representative (<http://dl.odu.edu/how-it-works/academic-advising>) in Distance Learning for advising support.

Academic advisors will make every effort to give effective guidance to students in academic matters and to refer students to those qualified to help them in other matters, but the final responsibility for meeting all academic requirements for a selected program rests with the student.

### How to Prepare for an Advising Session

All undergraduate, degree-seeking students are expected to utilize the online Degree Works (<https://www.odu.edu/academics/academic-records/degree-evaluation>) program to make decisions about course registration. Prior to an advising appointment, students should review their Degree Works curriculum page and select courses for the next term. These selections may be indicated in the long range planning feature of Degree Works for record-keeping purposes. Students are encouraged to develop a complete long range plan prior to their sophomore year, knowing that the plan may change based on student elective choices and tracks within major programs. Printing out the long range plan and bringing it to the advising appointment will allow the student to have a more productive discussion with the advisor about elective choices and future goal planning. If a student requires assistance with utilizing the Degree Works system, the Peer Educator office (<http://www.odu.edu/peereducator>) in the Student Success Center (<http://www.odu.edu/ao/successcenter>) offers individual and group tutorials on how to use the system and create a long range degree plan. Information about each major and the possible careers is available through video clips at <http://www.odu.edu/success/programs/finishin4>.

### Early Alert/Progress Report Success Advising

Academic success assistance is available to students who have progress grades at midterm (fall or spring semesters in 100-200 level courses) of C- or below. Students are contacted through ODU email by the first-year advisor in their academic major or by their Residence Life staff for individual consultation and referral to support services. Any student in academic difficulty may also receive individual academic coaching services from the Peer Educator (<http://www.odu.edu/peereducator>) office in the Student Success Center (<http://www.odu.edu/ao/successcenter>).

### UNIV Coursework

Academic success coursework is available for all freshmen, sophomores, and transfer students who end their first semester in academic warning. All freshmen students are required to register for UNIV 110 in accordance with the Undergraduate Continuance Policy (<http://www.odu.edu/continuance>). Sophomores and transfer students may register for UNIV 111 or UNIV 112.

## The Academic Advising Mission Statement and Goals

In keeping with the University's mission, the primary purpose of the Old Dominion University academic advising program is to empower students to explore, experience, and engage in educational activities that assist them in the development of meaningful educational and career plans to meet their full potential.

### Academic Advisor Goals and Teaching Outcomes:

GOAL 1. To assist students in developing suitable educational plans and programs of study that promote academic success.

GOAL 2. To help students explore and clarify individual academic and career goals.

GOAL 3. To teach students how to select appropriate courses and other educational opportunities that provide the experiences needed to develop their goals.

GOAL 4. To teach students to review and evaluate progress toward established educational goals and completion of requirements within individual programs of study using the degree evaluation system.

GOAL 5. To develop student awareness and understanding that decision-making in the advising process is based on student responsibility and to

promote understanding of University values as articulated in the University's mission statement.

GOAL 6. To encourage students to use University support services and related resources as needed (Undergraduate Catalog, Career Management Center, Counseling Services, Educational Accessibility, Writing Center, etc.).

GOAL 7. To participate in advisor training sessions, keeping current on University policies and procedures.

## Student Goals and Learning Outcomes in the Academic Advising Process:

GOAL 1. To take full responsibility for learning about opportunities and resources that help formulate academic and career plans and to gather the information needed for the successful completion of all graduation requirements, including, but not limited to, course scheduling, program planning, and understanding the academic advising process.

GOAL 2. To define academic and career goals by exploring options through courses and other educational experiences.

GOAL 3. To be engaged in the course selection process and to actively seek and participate in other educational opportunities that help in the achievement of academic and career goals.

GOAL 4. To read and understand the University's policies and procedures in relation to meeting University, College, and Departmental graduation requirements.

GOAL 5. To be responsible for new information provided through on-line resources and to be prepared with accurate information and relevant materials when contacting the academic advisor.

GOAL 6. To consult with the academic advisor on a mutually agreed upon schedule to review course choices, discuss academic and career goals, and assess progress towards degree completion.

## Academic Testing and Placement

Academic Enhancement's University Testing Center is located in the Student Success Center. Personnel administer University placement tests, College-Level Examination Program (CLEP) exams, DANTES, the Miller Analogies Test (MAT), PRAXIS, professional certification exams and correspondence tests. For information about testing services, please visit [www.odu.edu/elt](http://www.odu.edu/elt).

**Writing Placement.** All entering undergraduate students, including transfer students (with or without credit for freshman composition), must earn a passing score on the Writing Sample Placement Test (WSPT).

A passing score on the Writing Sample Placement Test (WSPT) is a prerequisite to registration for ENGL 110C. Transfer students with credit for ENGL 110C will not lose that credit. A transfer student with credit for ENGL 110C who has not passed the WSPT may not register for a writing intensive (W) course. Please contact Academic Enhancement to develop a plan to correct writing deficiencies and earn a passing score on the WSPT.

**Math Placement.** All incoming freshman students and transfer students are eligible to enroll in MATH 101M or MATH 103M. Placement into MATH 102M, MATH 162M and above will be based on a student's SAT or ACT score. Students who want to enroll in STAT 130M, MATH 102M, MATH 162M and above and who do not have the qualifying SAT or ACT score can challenge their math placement and/or seek academic credit by making an appointment to take the COMPASS placement test at the University Testing Center. Students challenging their placement may take the COMPASS test up to the end of the first week of classes.

All students who have studied a foreign language in high school for three or more years must take a placement exam before continuing in that same language. Students with less than three years of foreign language study in high school may take the placement test if they wish to begin higher than 101F; otherwise, they must begin with the 101F course. This policy does not apply to students who have advanced placement credit. Foreign language courses below the 300 level are not open to native and heritage

speakers; these students should consult a foreign language faculty member for advising.

Students whose native language is not English and who have satisfied English language proficiency requirements (see the section of this catalog on English Proficiency Requirements for Non-Native Speakers of English) are exempt from the foreign language requirements for General Education, including exemption from foreign language placement testing. Students pursuing degrees that require proficiency beyond the 100 level must be certified by the Foreign Languages and Literatures Department to obtain a waiver of the 200-400 level courses.

**Exemptions.** Students may satisfy the requirement for the first semester of General Education written communication based on their performance on one of two national examinations. Three hours of credit for ENGL 110C will be earned if the student receives either:

1. a score of 3, 4, or 5 on the Advanced Placement Examination in English Language and Composition; or
2. a score of 50 or higher on the College-Level Examination Program (CLEP) English Composition with Essay Examination.

Students with superior scores on the COMPASS test receive credit for MATH 162M, or both MATH 162M and MATH 163, thus fulfilling the General Education Requirement. Students desiring credit by examination for STAT 130M should apply to take the DANTES test at the University Testing Center.

Students may be exempt from the General Education Foreign Language requirement (without credit) in one of the following ways:

1. presentation of three high school credits in one foreign language;
2. presentation of two high school credits in each of two foreign languages; or
3. presentation of a score of 490 or above on the CEEB Foreign Language Achievement Test or its equivalent.

Credit is granted for scores of 3, 4 and 5 on Advanced Placement (AP) language exams in Chinese, French, German, Italian, Japanese, and Spanish and literature exams in French, Latin and Spanish. No more than nine credits will be awarded if both AP language and literature exams are submitted. Credit is also granted for scores of 4, 5, 6 and 7 on the A2 and B exams in French, German, Latin and Spanish of the International Baccalaureate (IB). Contact the Testing Center or the Department of Foreign Languages and Literatures for additional information. Students receiving B.A. degrees must demonstrate foreign language proficiency through the 202 or 212 level regardless of high school credits completed.

All placement tests described above are administered by the University Testing Center. Contact information can be found at the center's website at [www.odu.edu/elt](http://www.odu.edu/elt).

## Advising and Transfer Programs – Transfer Student Services

Old Dominion University recognizes the unique needs of transfer students who require a wide array of campus resources. The Office of Advising and Transfer Programs in the Student Success Center assists transfer students with pre-enrollment advising and transition into college after admission to Old Dominion University. A variety of services and programs are offered to new students, and students are encouraged to take advantage of every opportunity - *Explore, Experience, and Engage!*

Students transferring from the Virginia Community College System may view information about Old Dominion University's Guaranteed Admission Agreement, curriculum sheets, the letter of intent process and Articulation Agreements on the Transfer Advising website (<http://www.odu.edu/newtransfer/advising>). The Office of Advising and Transfer Programs also assists academic advisors with providing transition, orientation, and programmatic services for undergraduate transfer students from community colleges and other four-year colleges.

Old Dominion University offers a number of articulated programs with the Virginia Community College System. These programs begin with

course work taken at the community college and are completed at Old Dominion University with a baccalaureate degree. In accordance with the State Committee on Transfer Policy, these agreements are designed to minimize loss of credit due to transfer and to take maximum advantage of the lower tuition at the community colleges. See the Guaranteed Admission Agreement between Old Dominion University and the Virginia Community College System for more information on completing the Letter of Intent to Transfer (<http://www.odu.edu/newtransfer/letter-of-intent>). The Office of Advising and Transfer Programs is responsible for the development of these agreements with two- and four-year institutions, primarily within Virginia. Additionally, such agreements are developed with institutions in other states and countries. The Office also aids in the interpretation, implementation and promotion of such agreements. Further information regarding articulation and program agreements can be obtained from the Transfer Advising website (<http://www.odu.edu/newtransfer/advising>).

## Experiential Learning Credit Options at the Undergraduate Level

Old Dominion University offers a program for assessing college-level knowledge gained through work, life experience and self-study prior to attempting a specific ODU course. Students may initiate assessment of prior learning through a variety of assessment tools, including departmental examinations, portfolios, external examinations, performance assessment, or documented training programs, as determined by academic departments. The program, experiential learning, facilitates the assessment of such learning. A student may earn a maximum of 60 semester hours at the undergraduate level through experiential learning credit. However, in unusual situations when a student can demonstrate a more extensive knowledge base that would be applicable to a degree program, the student can apply to Advising and Transfer Program's experiential learning representative for an exception to the maximum of 60 credit hours. Requests will be forwarded to the appropriate department for review. Experiential learning credit may be granted through the following mechanisms:

1. **External Examinations.** Satisfactory scores on the College-Level Examination Program (CLEP), Defense Activity for Non-Traditional Education Support (DANTES), International Baccalaureate (IB), Advanced Placement (AP), Cambridge Advanced (A/AS Level) programs, and professional certification examinations evaluated by the American Council of Education (ACE) for college-level credit. It is strongly recommended that students who wish to challenge particular courses do so through CLEP or DANTES examinations for which Old Dominion University awards academic credit. Qualifying scores through the Advanced Placement Examinations Program, Cambridge Advanced (A/AS Level) programs, or Admissions Testing Program of the Educational Testing Service (ETS) are approved by departments. CLEP, DANTES, AP, IB, and Cambridge scores should be reported to the Office of Admissions.
2. **Departmental Examinations.** Upon approval of the chair or dean (designee) of the college in which the course is offered, a student may take a comprehensive examination in an academic course in which he or she can demonstrate proficiency and upon passing the examination receive credit for that course. A request for testing should be made through the Experiential Learning Office, which forwards the request to the chair of the department involved. A course may be tested through departmental examination one time only.
3. **Credit for Training.** Military and professional training is evaluated and recommended for college credit by the American Council on Education (ACE). The relevant academic department will recommend specific academic credit for posting to the student's record.
4. **Portfolio Development.** Upon approval of the chair or dean (designee) of the college in which the course is offered, a student may develop a portfolio for a course or courses offered by Old Dominion University to gain college-level credit. Portfolios are submitted to the experiential learning representative in Advising and Transfer Programs.
1. All experiential learning options will be granted with credit.
2. Experiential learning credit will be granted upon the written recommendation of the chair of the department or designated faculty assessor having jurisdiction over the courses involved with the chair's approval.
3. The applicability of experiential learning credit toward specific degree program requirements is subject to departmental approval.
4. A student may not fail a course at Old Dominion University and later receive credit for the same course through an experiential learning option.
5. A student may not enroll in a course for credit or audit at Old Dominion University and subsequently seek credit through an experiential learning option.
6. No letter grades will be entered on the student's transcript for experiential learning credit; this credit will be treated in the same way as transfer credit: a "P" (Pass) will be assigned and it will not count in the student's grade point average.
7. A student must request experiential learning credit as early as possible upon admission to degree status.
8. Experiential learning credit does not count toward the University's residency requirement. A student earning experiential credit must meet the minimum residency requirements of 25 percent of the total number of credits required for the degree at Old Dominion University, which shall include 12 residency hours of upper-level courses in the declared major program. The student should be aware that some program residency requirements exceed the University minimum residency requirements.
9. A student in a certificate or endorsement area may earn a maximum of six credit hours through experiential learning credit to apply to a certificate, endorsement or teacher licensure program. Experiential learning hours gained in these programs would be applicable to approved degree programs at Old Dominion University. In an approved undergraduate degree program, a student who has previously earned six credit hours of experiential learning credit for a certificate area may be eligible to attempt additional experiential learning credit toward a degree program.

The privilege of seeking experiential learning credit is available to both full-time and part-time degree status students only. A student should consult with the degree program advisor, site director, distance learning representative, and the experiential learning representative at the beginning of his or her academic career at Old Dominion University to determine how experiential learning may be applicable to the degree. For further information, visit the experiential learning web site at [www.uc.odu.edu/elt](http://www.uc.odu.edu/elt).

For information about experiential learning options for graduate students, please see the section of the Graduate Catalog on Experiential Learning Credit Options at the Graduate Level.

## Procedures for Portfolio Development

Students wishing to receive academic credit through portfolio development should do the following:

1. Consult the experiential learning representative in Advising and Transfer Programs for guidelines on preparing a portfolio documenting "experiential learning" experiences relating to the course for which credit is sought.
2. Submit the portfolio to the experiential learning representative and include appropriate fees.
3. The portfolio will be reviewed and forwarded to the appropriate department chair for evaluation.
4. The department chair, or a designated faculty assessor(s), will examine the portfolio and determine an award of credit. The decision will be forwarded to the experiential learning representative who will then notify the student and the University Registrar of the results.

If the conclusion for the portfolio assessment process results in a negative decision of the award of credit, a student may appeal the decision to the college having the responsibility for the course(s) for which credit is sought.

The basis for a portfolio assessment appeal is the student's charge that the assessment decision was awarded through prejudice or caprice. The burden of proof rests with the student.

Students must initiate appeals in writing within three weeks of receiving the completed portfolio evaluation form. The appeal must be written to the experiential learning representative.

The experiential learning representative will forward the appeal letter to the appropriate department chair. The chair will review the student's appeal. The chair will get input from the student and from the faculty assessor and may form an independent committee to review the appeal. The chair makes the decision on the validity of the appeal. If the chair concludes there is no cause for complaint, the student has the right to appeal to the dean of the college.

If the faculty assessor is the chair, the student may go directly to the dean. The dean will follow the procedures as outlined above. The decision of the dean of the college is final.

## Experiential Learning Fees\*

Students participating in the Experiential Learning program are responsible for assessment fees as follows:

### 1. External Examination

- Students are responsible for the testing fees for external examinations such as CLEP and DANTES, and should check with the University Testing Center at Old Dominion University for fee information. There is no additional experiential learning assessment fee for the granting of academic credit for external examinations.

### 2. Departmental Examination

- The experiential learning assessment fee is equal to 30% of the current approved in-state on-campus rate for undergraduate and graduate courses.

### 3. Training Evaluation

- The type of training determines the experiential learning assessment fee for training evaluations. For example, Old Dominion University already articulates military training, and therefore, there is no additional experiential learning assessment fee for the granting of academic credit. The assessment fee for training not previously evaluated by Old Dominion University is equal to 20% of the current approved in-state on-campus rate for undergraduate and graduate courses. For information about training programs that have been evaluated by Old Dominion University, see the experiential learning web site at [www.odu.edu/ao/successcenter](http://www.odu.edu/ao/successcenter).

### 4. Portfolio

- A one-time workshop materials fee.
- Portfolio assessment fee equal to 50% of the current approved in-state on-campus rate for undergraduate and graduate courses.

Fees are based on the credit hours attempted and are not refundable if the student does not receive credit as a result of the evaluation. There is no appeal of the fee charge. The fees must be paid at the time the student submits the completed portfolio, departmental examination or training documentation for evaluation.

For more information call (757) 683-3699, visit the web site at [www.odu.edu/ao/successcenter](http://www.odu.edu/ao/successcenter) or email [advisor@odu.edu](mailto:advisor@odu.edu) ([universitytesting@odu.edu](mailto:universitytesting@odu.edu)).

\* All fees are tentative and subject to final approval by the Board of Visitors and/or the president. Current experiential learning fees are available on the website at <http://www.odu.edu/ao/successcenter>.

## Orientation

Upon admission to the University, undergraduate students and their families and guests are invited to attend the University's orientation program, Preview. Students entering the University as new freshmen (including transfer students with less than 24 hours) are required to participate in the Preview Orientation program. Preview is scheduled throughout the summer in a series of one-day sessions for incoming freshmen and transfer students.

A Transition to College fee is included in the student tuition bill. For more information, see the web site at [www.odu.edu/preview](http://www.odu.edu/preview).

At Preview, students meet with academic advisors to plan and register for summer/fall semester classes and receive an introduction to University resources and campus life. A program for families and guests is scheduled concurrently.

A Preview is also scheduled in December and January for students enrolling in the spring semester. A program for families and guests is scheduled concurrently.

## Peer Educator Program

The Peer Educator Program (PEP), a component of Academic Enhancement, consists of peer tutoring, mentoring, supplemental instruction, academic coaching, and peer support training. In addition, PEP offers study space, workshops, and time management assistance to undergraduate students at all levels of study. The program is facilitated by trained undergraduate and graduate student staff that is committed to the success of ODU students. Morning, afternoon, evening and online hours are available by appointment for tutoring and mentoring, and all services and resources are available free of charge to all undergraduate students at ODU. To make an appointment, visit <http://uc.odu.edu/taa/tutortrac.shtml>, or for more information, please call (757) 683-6396.

**Peer Mentorship:** This formal mentorship program places a strong emphasis on increasing success behaviors through a combination of targeted academic coaching and less-structured social exchanges between the mentor and mentee. Mentors are matched with students and meet regularly throughout the semester.

**Peer Tutoring:** This program offers trained and certified academic assistance for students in nearly every subject area. Students schedule tutoring sessions as frequently as necessary to receive support in their coursework, homework, projects, presentations, and exam preparations. Students may schedule tutoring appointments through Tutortrac at: <http://uc.odu.edu/taa/tutortrac.shtml>. Students who prefer web-based tutoring have full access to Adobe Connect and SmartThinking online tutoring services. Visit <http://ww2.odu.edu/ao/successcenter/> to link to these services, as well as additional tutoring resources across the campus.

**Academic Coaching:** This program was created to assist students who are experiencing academic hardship and may benefit from the multifaceted intervention of tutoring, mentorship, and additional services. Students are guided through a series of formal interactions with trained peer coaches to improve study skills, note-taking techniques, test-taking, motivation, and other elements of success.

**Supplemental Instruction (SI):** Supplemental Instruction assists students in learning challenging course material through weekly meetings with students who have previously taken the course. These student SI leaders serve as academic mentors and assist the professor by offering review sessions, study tips, and additional office hours to enhance study skills and comprehension of the course content.

**Certified Peer Training Program:** Mentors and mentees are provided with ongoing support through engaging activities and assessment of mentors and staff. Mentors are trained and certified through the College Reading and Learning Association (CRLA). This service is offered to all peer programs and departments at ODU.

## Student Success Center

A partnership between Academic Affairs, Learning Commons, and Student Engagement and Enrollment Services, the Student Success Center provides the tools for students to succeed at Old Dominion University. Successful transitions to college life require a challenging, yet supportive environment that fosters academic discipline, intellectual curiosity, personal and civic responsibility, ethical behavior, campus involvement, and respect for diversity. Individualized programs and services empower students to take responsibility for their learning experiences and build their academic success plans leading to graduation and beyond.

Services include:

- skills development and learning support through academic coaching, tutoring, mentoring, supplemental instruction, and writing support
- writing, math, and foreign language placement assessments and national testing services
- undergraduate research and honors opportunities/courses
- first-year and second-year success programs
- new student orientation (Preview) and family programs
- assistance for financially-eligible and first-generation college students
- assistance for students with disabilities (short- and long-term)
- advising services for new students, transfer students, and students in academic difficulty
- instructional support for faculty, including technology assistance
- faculty development for improving writing in the disciplines
- liaison for the awarding of academic credit for work and life experience

The Student Success Center houses Academic Enhancement, Advising and Transfer Programs, Educational Accessibility, Honors College, Student Transition and Family Programs, Writing and Faculty Development (QEP), and Undergraduate Research. Visit <http://www.odu.edu/ao/successcenter> to link to these services, as well as additional resources across campus.

## Student Support Services

Student Support Services is federally funded and provides academic support for students meeting the eligibility criteria established by the U.S. Department of Education. Student Support Services is designed to increase the retention and graduation rates of low-income, first-generation college students and students with disabilities. The following support services are available to students on a continuing basis: academic and financial aid advising, tutorial assistance, study skills support, and academic success workshops. For more information, please call 683-3582 or visit [www.uc.odu.edu/sss](http://www.uc.odu.edu/sss).

## Upward Bound Program

The federal TRIO Upward Bound Program at Old Dominion University is federally funded to serve low-income and first-generation college bound students. The program provides academic support and counseling services to develop the skills and motivation in participants who need assistance in order to complete high school and enter post-secondary school.

The program's services are offered in two phases: an academic year phase and a summer residential phase.

During the academic year phase, students meet on campus on Saturdays to receive small group and individual tutoring in math, English, computer applications, foreign language, social studies, basic skills, and science as well as career, educational, and personal counseling.

The summer residential phase is a six-week experience. Students live on campus and receive classroom instruction in subject areas tutored in during the academic year phase. Cultural enrichment activities are also provided during both phases of the program.

Only students from Norfolk and Portsmouth who meet the program's U.S. Department of Education eligibility guidelines can qualify to participate.

For more information, visit the website at [www.studentaffairs.odu.edu/ub](http://www.studentaffairs.odu.edu/ub).

## Writing Proficiency Program Requirements and Policies

[www.odu.edu/ao/successcenter](http://www.odu.edu/ao/successcenter)

Old Dominion University provides a comprehensive writing program. The program is implemented through faculty in the Department of English as well as by faculty members in all majors who teach writing intensive courses. Academic Enhancement and the Writing Center support students as they work to improve their writing skills. Academic Enhancement's Writing for College Success Program (<http://www.odu.edu/ao/successcenter>)

offers workshops for campus students who need to improve their writing skills and individual conferences for those students (campus and distance learning) with transfer credit for ENGL 110C but who did not pass the Writing Sample Placement (WSPT). The Writing Center (<http://al.odu.edu/writingcenter/>) works with both undergraduate and graduate students in all disciplines to prepare them for the challenges of composing essay assignments, test preparation, seminar papers, theses, dissertations, and application materials.

## Undergraduate Writing Program Requirements

**Entrance Examination—Writing Sample Placement Test (WSPT).** All incoming students, including transfer students, will be tested for proficiency in writing. The test results determine the appropriate writing course for placement of each first-year student. A passing score on the Writing Sample Placement Test (WSPT) is a prerequisite to register for ENGL 110C or ENGL 126C. Freshman students unable to earn a passing score on the WSPT for placement into ENGL 110C or ENGL 126C may enroll into UNIV 150 Writing for College Success (3-credit elective course) or retake the WSPT. Successful completion of UNIV 150 meets the prerequisite for enrollment into ENGL 110C or ENGL 126C.

With the exception of those students holding baccalaureate or advanced degrees, all entering undergraduate students, including transfer students (with or without credit for freshman composition), must pass the Writing Sample Placement Test. Transfer students with credit for ENGL 110C will not lose that credit. A transfer student with credit for ENGL 110C who has not passed the WSPT may not register for a writing intensive (W) course. Please contact Academic Enhancement to develop a plan to correct writing deficiencies and earn a passing score on the WSPT.

**Evaluation of Writing Proficiency.** All students enrolled in undergraduate degree programs must pass ENGL 110C (or its transfer equivalency) with a grade of C (2.0) or better in order to register for ENGL 211C or ENGL 221C or ENGL 231C. Students must also pass ENGL 211C or 221C or 231C (or their transfer equivalency) with a grade of C (2.0) or better in order to qualify to register for a writing intensive (W) course. Finally all undergraduate students must complete their W course in the major at Old Dominion University and earn a grade of C (2.0) or better in order to earn a baccalaureate degree.

**Transfer Students.** Like all other students, transfer students must pass ENGL 110C (or its transfer equivalency) with a grade of C (2.0) or better in order to register for ENGL 211C or 221C or 231C and must also pass ENGL 211C or 221C or 231C (or their transfer equivalency) with a grade of C (2.0) or better in order to qualify to register for a writing intensive (W) course. NOTE: This policy also applies to transfer students holding associate degrees; holding an associate degree does not fulfill the requirements of the Undergraduate Writing Program if students received a grade below C (2.0) in any 100- or 200-level Composition (C) course. Transfer students must also take a writing intensive (W) course in their major at ODU and must pass that W course at ODU with a grade of C (2.0) or better in order to earn a baccalaureate degree.

**Distance Learners.** Students may contact their site directors for information on the WSPT and Evaluation of Writing Proficiency. For those students not associated with an ODU site, please contact the Testing Center website at [www.uc.odu.edu/testing](http://www.uc.odu.edu/testing) or the Office of Distance Learning at 1-800-968-2638.

Students following the degree requirements in Catalogs prior to 2012-13 may elect to meet the writing requirement through this option.

## The Honors College

The Honors College offers a four-year program where select incoming freshmen, current sophomores, and transfer students may enjoy low-enrollment general education courses designed exclusively for them. In their junior year, Honors College students have the opportunity to apply what they have learned at Old Dominion to solving real-world problems in the community by developing a one-credit civic or service learning project in consultation with the Dean of the Honors College. In their junior and senior years, Honors College students work one-on-one with ODU faculty to develop two upper-division courses as contract honors courses. In their



senior year, Honors College students participate in a three-credit senior honors colloquium, departmental capstone course, or honors thesis, which provides them with the opportunity to hone their research skills and assess their academic strengths in preparation for graduate school, international scholarship opportunities, and future employment.

The online application for admission into the Honors College is available on the Honors College website: <http://www.odu.edu/honors/about/apply>. Letters of recommendation attesting to the applicant's scholastic ability may be submitted to [honorscollege@odu.edu](mailto:honorscollege@odu.edu).

Being an Honors College graduate is a prestigious accomplishment, one that is viewed favorably by graduate schools and potential employers everywhere. Additional benefits include:

- Honors College students can apply to live in Honors Housing. Applications for Honors Housing must be made directly to the Office of Housing and Residence Life. The Office of Housing and Residence Life prioritizes requests based on the date BOTH the application and housing deposit are received.
- Honors College students enjoy faculty privileges at the library.
- All Honors College students may register for classes on the first day of the registration period.
- Honors College students can apply for travel grants to offset the costs of travel to a national or international conference at which they are presenting.
- Honors College students may apply for up to \$300 to offset the costs of essential equipment and supplies for the completion of research related to a Student Honors Apprenticeship Research Program (SHARP), honors contract course, or a senior honors thesis/project.
- Upon completion of the requirements of the Honors College, students are awarded a certificate, a medal, and a silver tassel.

Competition for acceptance into the Honors College is keen. The criteria used to select the limited number of first-year students admitted annually include high school grade point average and curriculum, Scholastic Aptitude Test scores, class rank, letters of recommendation, and a written personal statement.

The minimum admission requirements for continuing and transfer students are as follows: a 3.8 college grade point average, the ability to complete at least 48 additional credit hours at Old Dominion University, and two letters of recommendation from college faculty members.

## Honors College Requirements

Honors General Education and Honors Contract Course Requirements

Four honors courses \*

Capstone Requirement (select one):

HNRS 487 Senior Honors Colloquium

Capstone Course (Colloquium, Thesis, or Departmental Capstone Course)

HNRS 499 Senior Honors Thesis

Experiential Learning Component (select one in addition to HNRS 387):

HNRS 387 Honors Civic Learning Project

Honors College options for: Study Abroad, Teacher Preparation, Practicum, or Internship may be developed to fulfill the experiential learning component requirements.

Undergraduate Research: Complete two of the following

Undergraduate Research Learning Community Course

HNRS 226 Undergraduate Research Apprenticeship

Out of Class Educational Poster or Oral Presentation

Successful application for and completion of an Undergraduate Research Grant Project

Publication of an article in a research journal

HNRS 201 Monarch Think Tank I

HNRS 301 Monarch Think Tank II

HNRS 497 Honors Independent Study

HNRS 498 Honors Independent Study

Campus Lectures \*\*

\* Either honors general education or honors contract.

\*\* Honors College students are required to attend one lecture per semester for up to 8 semesters.

**Undergraduate Research Program.** The Honors College also supports the Student Honors Apprenticeship in Research Program (SHARP), which provides undergraduates with hands-on experience working with faculty on a wide variety of research projects. SHARP faculty mentors help students to acquire research skills early in their undergraduate careers. Later in their academic careers, SHARP students use and develop these skills through research-oriented course work, collaborative and faculty-sponsored research, as well as their own independent research projects that can be funded through Old Dominion's Undergraduate Research Grant Program. The Undergraduate Research Symposium and Undergraduate Research Journal provide students with the opportunity to present and publish their work under the supervision of the University's distinguished faculty. Additional information regarding undergraduate research opportunities is available on the Undergraduate Research Program's website: <http://www.odu.edu/ao/honors/academics/research/researchprog.shtml>

For additional information about the Honors College, visit the web site at <http://www.odu.edu/honors> or contact:

Dr. David Metzger  
Dean of The Honors College  
Student Success Center  
Old Dominion University  
Norfolk VA 23529-0076  
(757) 683-4865

## Technical Standards

To successfully complete a program at Old Dominion University, students must meet all academic and technical standards required by the program. Technical standards are all nonacademic criteria or standards for admission to or participation in the program in question. A technical standard is a description of the physical and mental abilities required of students to perform successfully in an academic program. Students are responsible for knowing the technical standards of their intended major program. Technical standards are documents that can and should be used in the advising process, both when students are exploring different majors and when they want specific information on what is required in a particular program.

Copies of all technical standards are located in the following offices:

Educational Accessibility, Institutional Equity and Diversity, and University Counsel. In addition, each department chair has a copy.

For students requiring accommodations, please contact the Office of Educational Accessibility for assistance. webpage: <http://www.odu.edu/educationalaccessibility>.

## Academic Credit For Extracurricular Activities

Extracurricular activities may be approved for credit for undergraduate students by academic departments, based on objectives, criteria, and evaluative procedures formally determined by the department and the student before the semester in which the activity is to take place. Such credit is subject to the review of the provost and vice president for academic affairs.

### Guidelines

The following guidelines regarding the administration of the policy on granting credit for extracurricular activities will provide university-wide standards on this matter. Within these standards individual departments may establish credit activities appropriate to their particular discipline.

1. A department may grant credit for extracurricular activities that fall within the academic interests of the department.
2. The extracurricular activity for which credit is to be granted must have demonstrable academic value.
3. A student desiring academic credit for extracurricular activity shall, prior to the semester the credit is to be granted, formally petition the chair of the department, describing the proposed project in detail and justifying its academic value.
4. If the department chair considers that a petition has merit, the chair will refer the student to a faculty member with expertise in that area. The student and the proposed faculty supervisor will refine the student's project. The faculty member will then make a recommendation to the chair concerning the validity of the project, the amount of credit to be awarded, and the grading system to be employed (pass/fail or letter grade). The recommended plan will include a description of the nature of the supervision and methods of evaluation to be used.
5. A recommended project approved by the chair will then be sent to the dean for approval.
6. If the project is approved, the student will then register for the appropriate course number and credit hours. Each department interested in granting credit for such activity will establish courses numbered "377, 378" for one to six credits each semester and titled "Extracurricular Studies."
7. After completion of an approved project, the student will submit a report to the faculty supervisor. This report will be retained by the faculty supervisor for examination by the department chair and/or other interested persons.
8. The faculty supervisor will review the results of the project and submit the appropriate grade to the registrar.
9. The burden of justifying a project and documenting the results rests on the student. It is also to be emphasized that credit will not be given retroactively.

## Activity Credits

The University sets a limit of 12 credit hours earned in activity courses that may be applied to any undergraduate degree. The individual college will determine the maximum number of such credits that students may apply in fulfillment of their particular degree requirements. In unusual circumstances, activity credit beyond the established college maximum will require the approval of the appropriate dean. In any case, the total number authorized by the college shall not exceed the limit set by the University. (Students may be counseled but not required either to take or avoid specific activity courses outside their own fields of study. They are further advised to limit the number of activity credits taken until they have ascertained the limitation on such credits set by the colleges in which they propose to major.)

Activity courses are generally defined as those that are not predominantly academically oriented and that are service, skill, recreational, or craft in nature, such as performing ensembles and organizations in music, one-credit health and physical education service courses, theatre arts activity courses, and certain military and naval science courses. All activity courses shall be identified specifically in the catalog and the class schedule and can be recognized by the "+" symbol following the course number.

Activity credits required by a student's major department will not be counted against the credit limitation, nor will the credits earned in courses numbered 377-378 that involve extracurricular studies.

## Assignment Submissions

Coursework is to be delivered to the instructor using the method specified. Electronic and postal delivery may be required.

## Attendance Policy

Regular classroom attendance is expected of all students and individual faculty may require class attendance. Course grades reflect not only performance on written assignments and exams, but also participation during class periods. As discussions cannot be reproduced, many times absences cannot truly be made up. Excessive absences therefore have a negative

effect on the student's learning and performance. Students are responsible for all class work, and a student who misses a class is expected to have the initiative necessary to cover properly the material missed. Students must meet all course deadlines and be present for all quizzes, tests, and examinations.

Syllabus information will include a statement of the attendance policy for each course and the effect of nonattendance on grades. Reasonable provisions should be made by the instructor for documented representation at University-sponsored athletic or academic functions, mandatory military training and documented illness. The granting of provisions for other documented absences is left to the discretion of the faculty member.

Due to the nature of asynchronous courses, students are expected to participate in class, but in formats that may not require attendance at regular intervals.

**Extended illness.** The student should notify the Office of Student Engagement and Enrollment Services when the student is going to be absent from classes for more than one week because of an illness. Student Engagement and Enrollment Services will notify the student's course instructors of the absence on his or her behalf.

## Class Attendance by Guests

Statement: The propriety for non-student presence in the classroom will vary dependent upon the nature of curricular offerings, dangers inherent to certain classrooms and labs, the optimum classroom environment for each class, and the preferences of each instructor. Guidelines specifying whether non-student guests will be permitted in the classroom, which are consistent with departmental policy, will be established for each class by the instructor and included in the syllabus for the course. These guidelines will apply to each site at which the class is offered.

## Dean's List

The Dean's List is announced at the end of each term. Any undergraduate student taking 12 or more hours of degree credit for grade point credit who attains a grade point average of 3.40 or higher with no grade below C (2.00) is placed on the Dean's list. The student must also receive a passing grade on any nondegree credit courses in which he or she is enrolled. Students who receive grades of I are not placed on the Dean's List.

## Duplicate Courses

An undergraduate student who has taken two courses that are designated by the department as duplicate may apply only one toward a degree. Courses considered to be duplicate are so designated in the course descriptions found elsewhere in this catalog. For example, a student receiving credit for BIOL 121N and BIOL 122N cannot receive credit for BIOL 110N and BIOL 111N.

## Final Examinations

The University firmly believes that a comprehensive evaluation of a student's achievement in a course is a vital part of the educational process. Final examinations, if given, are to be given at the time and in the location given on the Registrar's Office website at [www.odu.edu/registrar](http://www.odu.edu/registrar). Upon request of the instructor, exceptions to this regulation may be made only by the dean.

In the event that a final examination is changed to other than that of the scheduled time, provisions will be made by the instructor for any student who cannot comply with the schedule change.

Any student who has three examinations scheduled in one calendar day and is unable to resolve the problem informally with the instructor or instructors may petition the dean for relief.

All examinations are to be retained for one year by the faculty members. Students have the privilege of requesting conferences with the instructors in regard to their final grades.

Students enrolled in asynchronous, video streaming, CD Rom, or like courses that may not follow the traditional semester timetable will be

required to adhere to the examination schedule set by the professor. In addition, students not associated with a distant learning site, higher education center, or with main campus will need to secure a Proctor to administer all tests, quizzes, and final exams. A postal fee will be incurred by the student for this service. For more information on proctoring, contact the Office of Distance Learning at 1-800-968-2638.

## System of Grading

Grade	Grade Points	Undergraduate	Graduate
A	4.00	Superior	Excellent
A-	3.70	Superior	Excellent
B+	3.30	Good	Good
B	3.00	Good	Good
B-	2.70	Good	Fair
C+	2.30	Satisfactory	Poor
C	2.00	Satisfactory	Poor
C-	1.70	Passing	Poor
D+	1.30	Passing	Not Used
D	1.00	Passing	Not Used
D-	0.70	Passing	Not Used
F	0.00	Failing	Unsatisfactory
WF	0.00	Unofficial Withdrawal	Unofficial Withdrawal
P	None	Pass	See below
F (P/F)	None	Fail	See below
O	None	Audit	
I	None	Incomplete	
II	None	Incomplete not Subject to Time Limit	
W	None	Official Withdrawal	
Q	None	Progress but not Proficiency	
Z	None	No Grade Reported	

The use of plus and minus grades is at the discretion of the instructor.

The grade point average is calculated by dividing the accumulated number of grade points earned by the accumulated number of credit hours attempted. Grades of F and WF and repeats are included, but official withdrawals, audits, and grades on noncredit courses, nondegree credit courses, and pass/fail degree courses are not included.

For graduation, an undergraduate student must have a minimum grade average of C (grade point average of 2.00) in all courses taken and a grade point average of at least 2.00 in the major except for those programs requiring grade point averages above a 2.00.

A 3.00 average will be required for the awarding of a graduate degree or certificate. A student whose average falls below 3.00 following six or more graduate hours attempted shall be placed on probation or suspended in accordance with the continuance regulations for graduate students.

Grades in courses accepted for transfer credit are not counted in the computation of grade point averages.

Grades are available to students through the secure website. Grades are mailed to students only if a written request is submitted to the Office of the University Registrar.

**WF and W Grades.** The grades of WF and W indicate withdrawal from a course only under those conditions described in the sections entitled Class Schedule Change Procedure and Grading Policy for Withdrawal From Classes.

**Incomplete Grades.** A grade of I indicates assigned work yet to be completed in a given course or absence from the final examination and is

assigned only upon instructor approval of a student request. The I grade may be awarded only in exceptional circumstances beyond the student's control, such as illness, and only after 80% of the time allocated for the course has elapsed and substantial progress has been made toward completion of course requirements with the exception of courses that do not fit within the traditional semester calendar. In cases of exceptional circumstances beyond the student's control, it is the responsibility of the student to approach the instructor to request an I grade and to provide documentation, including a written statement of when the work will be completed, to support the request. The authority to award an I grade rests with the instructor whose decision is final. Students whose requests for I grades are approved must not re-register for the class until the I grade has been resolved. The I grade becomes an F if not removed through the last day of classes of the following term (excluding the exam period) according to the following schedule: I grades from the fall semester become F's if not removed by the last day of classes of the spring semester; I grades from the spring semester and the summer session become F's if not removed by the last day of classes of the fall semester. An I grade may be changed to a W only in very unusual circumstances and when the student's situation has changed since the I grade was awarded. In these cases, the request for a change to a W must be in writing, documented, and approved by the instructor, department chair and dean. Students will not be allowed to graduate until all grades of I have been resolved.

In the case of courses that do not fit within the traditional semester calendar, the faculty member assigns the I grade. The time periods for the removal of I grades before they become grades of F are the same as those stated in the previous paragraph.

Extension of the I time limitation normally will not be approved except for reasons beyond the student's control and only if the supervising faculty member is available and willing to supervise the work beyond the normal time limit. Students should submit the request to the instructor, who should submit approval, via the chair, to the University Registrar in order to retain the I. The approval from the instructor should designate the expiration date of the extension.

A grade of II indicates incomplete work not subject to the time limits described above for I grades. The II grade can be used only in those courses directly related to the research for and preparation of the graduate thesis/dissertation.

**Z Grades.** A grade of Z indicates that no grade has been reported by the instructor and will convert to a grade of F if not removed through the last day of classes of the following term (excluding the exam period) according to the following schedule: Z grades from the fall semester become F's if not removed by the last day of classes of the spring semester; Z grades from the spring semester and the summer session become F's if not removed by the last day of classes of the fall semester. Students will not be allowed to graduate until all grades of Z have been resolved.

**Interim Academic Evaluation.** Faculty teaching 100- and 200-level undergraduate courses will provide specific feedback regarding progress in the course by posting an interim grade via Leo Online by the beginning of the fifth week of classes in the fall and spring semesters. Providing timely information to students on graded work makes students aware of their performance so they can determine whether to seek additional help from the faculty member, tutorial services when available, their academic advisor and/or withdraw from the course prior to the established deadline for withdrawal.

**Mid-Semester Feedback.** The University believes that regular assessment of students and feedback to them is essential to effective teaching and learning. Therefore, faculty members will provide all students with evaluation of their progress in a course prior to midsemester (or equivalent in a nonsemester course) so that students have information about their progress before the withdrawal deadline, which is the end of the tenth week of classes.

## Grade Forgiveness

Under the Grade Forgiveness Policy, undergraduate students seeking a baccalaureate degree may improve their grade point average (GPA) by

repeating up to five courses taken previously. Each repeated course must be the same course as taken previously and must be completed through Old Dominion University. The registrar automatically applies the Grade Forgiveness Policy to all eligible course repeats at the end of each semester. The Grade Forgiveness Policy became effective for the Fall 1997 semester. Courses repeated prior to the Fall 1997 semester are not eligible for grade forgiveness. Grade forgiveness will not be processed after a student graduates.

## Grade Forgiveness Policy

Undergraduate students are subject to the following conditions and requirements.

1. Students who receive a grade of C– or lower (grades of C–, D+, D, D–, F, and WF) may repeat up to five courses to improve the overall grade point average. Only the first five repeated courses will be forgiven. Students are not given an option to select which course might be forgiven. A course may be repeated once with grade forgiveness applied. Grade forgiveness is automatically applied only to the first repeat of a course with an original grade of C– or less, regardless of how many times the student may elect to repeat the course for other reasons. The Grade Forgiveness Policy will not be applied to courses for which a grade of C or higher was ever earned. Additional courses that are not eligible for grade forgiveness include courses taken under the pass/fail option, courses taken under the audit option, courses for which a grade of W was the only grade awarded, courses that currently are incomplete (I grade), or courses for which a grade of F was awarded as a result of an act of academic dishonesty.
2. The Grade Forgiveness Policy applies only to the repeat of the same course (same number, same title, same credit value, and, for topics courses, same subtitle and same credit value). Exceptions will be made where the course number or title is the only change and the change is documented in the Catalog and approved for grade forgiveness by the assistant vice president for undergraduate studies.
3. The Grade Forgiveness Policy will not be extended to courses originally taken elsewhere, including Norfolk State University and institutions with which Old Dominion University has consortia arrangements. In addition, courses repeated at other institutions will not be used to forgive Old Dominion University courses.
4. Students may not be able to repeat a course in the following cases: enrollment is restricted, the student no longer qualifies for admission to a course, the prerequisites are enforced, major or sequence requirements have been changed, or the curriculum has been revised. In such cases the decision of the assistant vice president for undergraduate studies in consultation with the appropriate academic department will prevail. Exceptions are granted only in rare instances. In any course or program where enrollment demand exceeds the resources to offer sufficient openings or sections to meet that demand, the academic unit may give registration priority to students taking the course for the first time.
5. Students may elect to use both grade forgiveness and the Adjusted Resident Credit (ARC) policy. However, students cannot use grade forgiveness for individual courses for which adjusted resident credit already has been applied.
6. Students who have graduated may not use the provisions of this policy to repeat for forgiveness a course taken prior to the date of graduation. Once a bachelor's degree has been awarded, a student may not raise the undergraduate grade point average by repeating a course taken as an undergraduate.
7. Under this policy, only the second grade earned, whether higher or lower than the original grade, will be calculated in the grade point average for the purposes of continuance, graduation, etc. Any repeats of a course after grade forgiveness has been applied will be averaged with other course work. All grades will remain on the student's permanent record, but the record of a previous grade in the course will be marked to indicate that the course has been repeated. Academic suspensions will not be removed from student transcripts and Dean's List status will not be added after grade forgiveness is applied to the student record in cases where the grade point average is improved sufficiently to change the student's status for the semester in question.

8. An enhanced grade point average using the Grade Forgiveness Policy does not determine eligibility for graduation with honors. To determine eligibility for graduation with honors, the student's complete record, including grades (grade points and hours) for courses that have been forgiven, will be evaluated to calculate the final grade point average. If the student's overall average is sufficient, graduation with honors will be posted to the student's record.
9. In cases where the student repeats a course in which a grade of C or better was awarded, all grades received, including the original grade, and all hours earned will be used for calculation of grade point averages. The course will count only one time toward graduation certification and degree completion.
10. Students receiving financial aid should consult with their Financial Aid representative to determine how use of this policy may affect financial aid status.
11. Other schools, including professional and graduate schools, may not honor this policy on repetition of courses with forgiveness.
12. Veterans should consult the Office of the University Registrar to determine the impact of course repetition on their eligibility for benefits.

## Grade Appeals

### Grade Appeal Procedure

1. The purpose of the grade appeal procedure is to serve the needs of graduate and undergraduate students who believe that they were unjustly awarded a final course grade by a faculty member through prejudice or caprice. This policy applies to the final grade for the award of academic credit and does not apply to graduate and undergraduate examinations that are administered as part of the degree progression and certification processes (such as comprehensive examinations and candidacy examinations at the graduate level). The basis for a grade appeal is the student's charge that the final grade was awarded through prejudice or caprice. The burden of proof rests with the student.
2. Students must initiate the appeal within the same time limitations that exist for removing a grade of I from a record (see the policy on System of Grading).
3. The student will consult with the instructor first for an explanation of the method of evaluation and to determine whether an error has been made.
4. If the student is not satisfied with the results of the conference with the instructor and the student wishes to pursue the appeal, the case must be presented in writing for a first-level appeal. The student's grade appeal letter should (1) state specific reasons and give examples of faculty prejudice or caprice, (2) show that prejudice or caprice affected the awarding of the final course grade, and (3) be presented as a complete package and include all supporting documentation.
  - a. The student will submit the grade appeal letter to the chair of the department.
  - b. If the instructor is the chair, the student will submit the grade appeal letter to the dean.
  - c. If the instructor is the dean, the student will submit the grade appeal letter to the chair of the department in which the dean is teaching the course.
5. If it is concluded at the first-level appeal that there is no cause for complaint, the person to whom the appeal was submitted will notify the student in writing that the appeal is denied. The student may submit a second-level appeal as detailed below.
  - a. If the chair initially concludes in the first-level appeal that there is no cause for complaint, the student has the right to appeal to the dean. The student should request in writing that the chair forward the grade appeal package to the dean to initiate the second-level appeal.
  - b. If the instructor is the chair and the student has appealed directly to the dean and the dean concludes in the first-level appeal that there is no cause for complaint, the student has the right to appeal to the provost and vice president for academic affairs. The student should request in writing that the dean forward the grade appeal package to the provost and vice president for academic affairs to initiate the second-level appeal.

- c. If the instructor is the dean and the student has appealed to the chair of the department in which the dean is teaching the course and the chair has concluded in the first-level appeal that there is no cause for complaint, the student has the right to appeal to the provost and vice president for academic affairs. The student should request in writing that the chair forward the grade appeal package to the provost and vice president for academic affairs to initiate the second-level appeal.
6. If the person to whom the second-level appeal is submitted concludes that there is no cause for complaint, the student will be notified in writing that the grade appeal process is complete and no further appeal is allowed.
7. If during the first- or second-level appeal process it is concluded that there may be valid cause for the complaint, the person to whom the appeal has been submitted should consult with the instructor and student and attempt to mediate the dispute. Among the alternatives available for resolution of the case will be the assignment of the grade of P if the chair, the instructor, and the student express their agreement in writing. If mediation fails, the person to whom the appeal has been submitted will offer to form a committee to carry out an independent investigation and a hearing will be held.
  - a. The person to whom the appeal has been submitted will appoint a committee from the department or college. The committee will consist of two faculty and one student. Both the instructor and the student will have the right to challenge, for valid cause, any or all of the members of the committee, and in that event replacements will be appointed and no further challenge will be permitted. The committee will hear the instructor, the student, and other pertinent witnesses. The hearing will be taped, but the tapes will be erased after one year following disposition of the case. The committee, after careful deliberation, will make its recommendation to the person to whom the appeal was submitted, who will relay the information to the instructor and the student.
  - b. If the committee finds that there is no cause for complaint, the grade appeal process is complete and no further appeal on the merits of the case is allowed. Only one hearing on the merits of the case is allowed.
  - c. If the committee finds on behalf of the student and recommends a change of grade and the instructor refuses to change the grade, then the person to whom the appeal was submitted will consult with the student about the advisability of accepting a P grade. Should the student consent to acceptance of a P grade, the person to whom the appeal was submitted is authorized to change the contested grade and will so inform the registrar. A P grade established under this policy will be given irrespective of the University policy on hours permitted for P grades or restrictions on when a P grade is permissible and will not prevent progression in the degree program or courses for which this course is a prerequisite.
  - d. If either the instructor or the student believes that the established procedures for the appeal of grades have not been followed, an appeal for a rehearing may be to the person identified as the second level of appeal. The only basis for appeal will be the failure to have been provided due process as prescribed by the policy.

## Guidelines and Procedures for Grade Adjustments for Nonacademic Reasons

1. Errors in the assignment of grades (e.g., a C received instead of an A) must be brought to the attention of the faculty member immediately upon receipt of the grade. If confirmed, the instructor will submit a grade change through the chair to the University Registrar. An online process for grade changes is available if the grade to be changed is not older than two semesters. In these cases, the instructor of record makes the change online. The chair is notified by email of the change and may at that time deny the change of grade. If the grade to be changed is older than two semesters, then the instructor submits an Academic Record Change Form (H-1002) to the chair, who forwards it to the University Registrar if it is approved, and notifies the instructor of reasons for denial if it is not approved.

2. Administrative errors (e.g., drop/add submitted but not processed) should be brought to the attention of the University Registrar immediately upon receipt of the grade.

## Repeating Courses

Normally, undergraduate students may not repeat courses in which they have previously earned a C or better or in which they have received transfer credit. Exceptions to this should be made by the department chair or, in the case of graduate students, by the dean of the college in which the graduate student is enrolled, and should be allowed only under the following conditions:

1. A student has a long delay (usually more than five years) between an introductory course (or the first half of a two-course sequence) and subsequent study, so that repeating the course is advisable for future success in the field.
2. A department requires that grades higher than C be earned in particular courses or requires a cumulative grade point average greater than 2.00 and stipulates that students who earn less than the desired grades or grade point average retake the courses.

None of the credit hours earned in courses that have been repeated for credit under these conditions will be applicable toward the total hours required for the degree. Grades earned in both the original course (if C or above) and the repeated course will, however, be used in the calculation of the cumulative grade point average.

The Grade Forgiveness Policy does not apply when courses are repeated in which a grade of C or higher was earned originally nor does the Grade Forgiveness Policy apply to transfer courses. Please refer to the Grade Forgiveness Policy in this Catalog for information about repeating courses in which grades below C were earned.

## Regulations for Continuance: Undergraduate Students

### Notification of Academic Status

It is the responsibility of every student to determine his or her academic status on-line at [www.leonline.odu.edu](http://www.leonline.odu.edu). The University makes every reasonable effort to notify undergraduate students who are not in good standing of their academic status. A first class letter is mailed to the permanent address of each undergraduate student (degree and non-degree seeking) placed on academic warning, academic probation and suspension. Additionally, an email containing the same information will be sent to the student's Old Dominion University e-mail address in accordance with the Electronic Messaging Policy for Official University Communication. Non-receipt of a letter or e-mail by a suspended student will not be considered grounds for claiming eligibility to enroll for a subsequent semester. All academic status notices appear on the student's transcript and will not be removed.

### Undergraduate Continuance Regulations

At the end of each semester—fall, spring, and summer—the coordinator of academic continuance reviews the records of all students who do not maintain a 2.00 grade point average (GPA) and acts according to the following policies, which are summarized in the table below.

1. **ACADEMIC WARNING.** A student will be placed on academic warning **for one semester** when the student's cumulative GPA falls below 2.0 at the end of a semester, including summer sessions. A student on academic warning may not enroll in more than 14 credits per semester of attendance (no more than six credits in the summer sessions, and no more than one course in any single summer session) except under extenuating circumstances and with the permission of the dean or designee of the college in which the student is enrolled. A student on academic warning must achieve a cumulative GPA of at least 2.0 at the end of the next semester of attendance to be in good standing. Failure to achieve a cumulative GPA of at least 2.0 results in academic probation.

Old Dominion University is committed to assisting students in achieving their academic goals. Therefore, freshman students on academic

warning are required to participate in a success program sponsored by the Student Success Center in their next semester of attendance. Failure to complete the requirements of the success program will result in cancellation of registration for the next fall or spring semester.

2. **ACADEMIC PROBATION.** A student is placed on academic probation when the student's cumulative GPA falls below 2.0 for **two consecutive semesters of attendance**, including summer sessions. 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 and placed in good academic standing.

Students on academic probation are required to meet regularly with their advisor during their next semester of attendance. A student on academic probation may not enroll in more than 14 credits per semester of attendance (no more than six credits in the summer sessions, and no more than one course in any single summer session).

Failure to achieve a 2.0 semester GPA at the end of a fall or spring semester while on probation results in academic suspension. Students who receive a 0.0 GPA for two consecutive semesters (fall, spring) will be suspended immediately.

3. **ACADEMIC SUSPENSION.** Following a semester of academic probation, an undergraduate student will be suspended at the end of the fall or spring semester if the cumulative grade point average remains below a 2.0 AND the semester grade point average falls below 2.0. Old Dominion University does not suspend students at the end of the summer sessions. Students suspended at the end of the fall term must separate from the institution for spring term; students suspended at the end of the spring term must separate from the institution for summer and fall terms.

A student may apply for readmission to ODU 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 ODU.

Although a student may be approved for readmission to ODU, the student is not automatically eligible to receive federal or state financial aid. See the "Financial Aid" section of this catalog for information about Satisfactory Academic Progress (SAP) standards and suspension of aid eligibility. Detailed information about the SAP appeals process can be found on the ODU Office of Financial Aid web site at <http://odu.edu/af/finaid/sapPolicy.pdf>.

Academic Status	Grade Point Average	Requirements
Good Standing	2.00+ cumulative GPA	
Academic Warning (1st occurrence)	1.99 or less cumulative GPA	Initial term of academic difficulty; student eligible to continue
Academic Probation (1st occurrence)	1.99 or less cumulative GPA	Second consecutive term of academic difficulty; student eligible to continue
Academic Probation (2nd and subsequent occurrences)	Term GPA = 2.0 or above AND cumulative GPA = 1.99 or less	Second consecutive and subsequent term(s) on academic probation; student eligible to continue with a minimum 2.0 term GPA

First Suspension (see below)	Term GPA AND cumulative GPA = 1.99 or less	After two consecutive semesters, one on academic warning and one on academic probation, first term of academic difficulty in which cumulative and term GPA are below 2.0; student NOT eligible to continue
If suspension occurs during the: Fall term OR Spring term		Student must separate from ODU for the: Spring term OR Summer and Fall terms
Second suspension	Term GPA AND cumulative GPA = 1.99 or less	After academic warning, academic probation and first suspension occur, second term of academic difficulty in which cumulative and term GPA are below 2.0; student is placed on a mandatory five-year suspension

All academic status notices appear on the student's transcript and will not be removed.

### **Guidelines for filing a suspension appeal for continuous enrollment:**

#### **2014 – 15 Suspension Appeal Deadlines:**

Suspension Posted	Appeal Application Deadline	Appeal Decision Posted
December 2014	January 5, 2015	January 7, 2015
May 2015	May 18, 2015	May 20, 2015

1. All students have the right to appeal their suspension if extenuating circumstances warrant such action. All appeals must be submitted in writing with the Suspension Appeal Form or on-line at [www.odu.edu](http://www.odu.edu) advising by the deadline posted above. Suspension Appeal Forms must be delivered to the coordinator of academic continuance. Late appeals will not be reviewed.
2. Appeals must be based on circumstances pertinent to the semesters in which academic difficulty occurred that were beyond the control of the student and for which official withdrawal from the course(s) was not an option. Appeal letters must be legible and authored by the suspended student. In order to be reviewed, an appeal letter must:
  - Document the extenuating circumstances such as work, poor study environment, finances, illness, or personal relationships that have adversely affected performance: i.e. statement or letter from physician, employer, family members, faculty, academic advisor, Counseling Center, Educational Accessibility.
  - Explain how the extenuating circumstances caused each semester of grades below the 2.0 minimum grade point average.
  - State reasons why official withdrawal was not requested.
  - Present a plan of action for subsequent enrollment, should the appeal be granted  
Appeal letters must provide sufficient detail and explanation regarding the aforementioned points because there is no face-to-face meeting with appeal committee members. The decision of the appeals committee is final.
3. Students who do not file a suspension appeal may not re-enroll until the suspension period has been served and readmission has been granted.
4. Students suspended for a second time who do not file an appeal for continuous enrollment may submit an appeal by the published deadline for subsequent enrollment. Students suspended for a second time whose appeals are denied are no longer eligible to attend Old Dominion

- University or any of its satellite campuses until readmission after the mandatory five-year separation has occurred.
5. A student suspended a third time will no longer be eligible to attend Old Dominion University or any satellite campuses. A student will not be eligible to appeal the suspension.
  6. If the student has pre-registered for a subsequent semester, all registration will be administratively dropped if the suspension appeal is denied. The Office of Finance will audit the accounts of students whose appeals are denied, and a tuition refund, if appropriate, will be issued. Students who choose not to appeal the academic suspension will be dropped from all courses before the tuition deadline.

### **Returning from Academic Suspension**

1. All students returning from suspension must submit an application for readmission from suspension at [www.uc.odu.edu/continuance](http://www.uc.odu.edu/continuance) in order to re-enroll and must submit all necessary documentation. The student must include a formal letter explaining the circumstances that put the student in academic difficulty and what plans the student has made to ensure success. The deadlines to reapply for admission are as follows:

Fall semester - second Friday in August  
 Spring semester - third Friday in December  
 Summer semester - second Friday in April

Readmission requests received after the deadline will not be considered. Students must resubmit the application by the next deadline. No readmission application will be reviewed without the letter

2. Each student returning from suspension must earn at least a 2.00 GPA for each semester. If the 2.0 semester GPA is not met, the returning student will be suspended again. Students returning from suspension should acquaint themselves with the options available under the Adjusted Resident Credit (ARC) policy and should note that use of the ARC policy requires a separation from Old Dominion University for at least one calendar year.
3. All students readmitted after serving a suspension must attend a workshop conducted by the Office of Continuance prior to the start of classes to complete the readmission process. Students who fail to attend a workshop will be dropped from all classes if they are registered and their readmission will be revoked for the semester. Students in this situation will be eligible to reapply for the next semester, but must begin the readmission process again.
4. Students who are suspended while under non-degree admission status, and who reapply and are readmitted, should be aware that they are readmitted to the non-degree status. Non-degree students are not eligible for financial aid.
5. Students readmitted to the University from suspension or due to a successful suspension appeal do not automatically qualify for financial aid. Please refer to the Financial Aid section of the catalog for the Financial Aid Continuance policy. All students who are suspended should contact their financial aid counseling team immediately to discuss their options. It is important that students are aware from the outset that a minimum of six credit hours with a GPA of 2.00 or more is a prerequisite to the appeal to re-establish financial aid eligibility. The six credit hours must be completed during one term (semester).

### **Credits Earned While Under Suspension**

Credits earned at another accredited institution at a grade level of C (2.00) or better while an undergraduate student was under suspension from Old Dominion University will be accepted upon receipt of official transcripts following readmission.

### **Adjusted Resident Credit**

Any undergraduate student who leaves Old Dominion University for at least one calendar year will be given the option of requesting a grade-point-average status equivalent to that of a student admitted as a transfer according to the following conditions and regulations.

1. Prior to the one year's absence, the student must have a cumulative grade point average less than 2.00.

2. The student must have separated from the institution for at least one calendar year. A term in which the student received W grades cannot be counted as part of the calendar year separation.
3. Upon returning to the University, the student must earn a minimum of 30 credits at Old Dominion University to be eligible for a degree. This must include twelve hours of upper-level courses in the declared major program.
4. Upon return, a full-time student must have attained a 2.00 grade point average for all work attempted since his or her return and must have completed a minimum of 12 semester hours. There may be no incomplete grades in the record. Courses that do not compute in the grade point average will not count toward the minimum of 12 semester hours.
5. Upon satisfying the above requirements, the student must submit the application for Adjusted Resident Credit to the Office of the University Registrar.
6. This option will be available only once during the student's career at Old Dominion University. In all cases, the Adjusted Resident Credit option must be elected and the student's record adjusted prior to graduation. Waivers of the requirement that students have less than a 2.00 grade point average can be made only in those programs that require greater than a 2.00 for admission.
7. Consultation and approval by the appropriate department and approval of the dean(s) of the college(s) in which the student's major program resides will be required. Once an application for Adjusted Resident Credit is approved and applied to the student's record, this action is final.
8. Students may elect to use both grade forgiveness and the Adjusted Resident Credit Policy. However, students cannot use grade forgiveness for individual courses for which adjusted resident credit already has been applied. In addition, the application of adjusted resident credit will not change the number of times a student can elect to use grade forgiveness.
9. Under this option: (1) eligible students will receive degree credit only for those courses in which grades of C (2.00) or better were earned prior to readmission; (2) likewise, hours attempted for courses in which grades of C-, D+, D, D- or F were received prior to readmission will not be considered in computing the student's new cumulative grade point average; and (3) grade points earned for any course completed prior to readmission will not count in determining the student's new cumulative grade point average.
10. All grades received at the University will be part of the individual's official transcript and will be used to determine honor awards. However, computation of a new grade point average for graduation and continuance will be based on work performed subsequent to reinstatement.
11. In cases of dual jurisdiction, University continuance regulations will prevail.

Before making the request for the Adjusted Resident Credit process, all students should consult their academic advisor. In addition, any student who is a financial aid recipient should consult his or her financial aid counselor in the Office of Financial Aid. Application of the Adjusted Resident Credit Policy may adversely impact the student's Satisfactory Academic Progress and subsequent eligibility for federally funded financial aid.

Students wishing to avail themselves of this policy may receive procedural information from the Office of the University Registrar.

### **Student Technology Skills**

It is assumed that students entering Old Dominion University have basic productivity software proficiency, possess e-mail skills, and know how to navigate the Web. Some courses, particularly online courses, will require technology proficiency at levels higher than this. It is the student's responsibility to insure that he or she possesses the technology skills and proficiency required for each enrolled course or program of study.

## **Submission of Written Work To More Than One Class**

In general, it is not acceptable for a piece of work such as a term paper to be submitted to more than one class for credit. In cases where submission of the same paper is appropriate, prior approval must always be obtained.

An example of a situation in which the same paper might appropriately be submitted would be one in which a student was enrolled in two classes, in both of which a given research topic was not only of interest to the student but was completely appropriate to both classes. In such circumstances, the student would approach the instructors of the two classes and obtain approval to submit the same term paper to both classes, based on prior agreement concerning the depth of the study, amount of material covered, and the length of the paper to be submitted (which should be longer than a paper submitted to one class).



# Degree Programs

## Arts and Letters

Degree	Majors
Bachelor of Arts	African American and African Studies, Art History, Asian Studies, Communication, Criminal Justice, English, Foreign Languages, Geography, History, Interdisciplinary Studies, International Studies, Music, Philosophy, Political Science, Sociology, Studio Art, Theatre and Dance, Women's Studies
Bachelor of Science	African American and African Studies, Communication, Criminal Justice, Geography, Interdisciplinary Studies, Political Science, Sociology, Women's Studies
Bachelor of Fine Arts	Fine Arts
Bachelor of Music	Composition, Performance, Music Education, Music Industry
Master of Arts	Applied Linguistics, Applied Sociology, English, History, Humanities, International Studies, Lifespan and Digital Communications
Master of Fine Arts	Creative Writing
Master of Music Education	
Doctor of Philosophy	Criminology and Criminal Justice, English, International Studies

## Business

Degree	Majors
Bachelor of Arts	Economics
Bachelor of Science in Business Administration	Accounting, Business Analytics, Economics, Financial Management, Information Systems and Technology, International Business, Management, Maritime and Supply Chain Management, Marketing Management
Master of Arts	Economics
Master of Business Administration	
Master of Public Administration	
Master of Science	Accounting
Doctor of Philosophy	Business Administration, Public Administration and Urban Policy

## Education

Degree	Majors
Bachelor of Science	Human Services, Occupational and Technical Studies, Park, Recreation and Tourism Studies, Physical Education, Speech-Language Pathology and Audiology
Master of Science	Occupational and Technical Studies
Master of Science in Education	Biology, Chemistry, Counseling, Early Childhood Education, Educational Leadership, Elementary Education, English, Physical Education, Reading, Secondary Education, Special Education, Speech-Language Pathology
Education Specialist	Counseling, Educational Leadership
Doctor of Philosophy	Community College Leadership, Counseling, Curriculum and Instruction, Early Childhood Education, Educational Leadership, Higher Education, Human Movement Science, Instructional Design and Technology, Literacy Leadership, Occupational and Technical Studies, Special Education

## Engineering and Technology

Degree	Majors
Bachelor of Science in Civil Engineering	
Bachelor of Science in Computer Engineering	
Bachelor of Science in Electrical Engineering	
Bachelor of Science in Mechanical Engineering	
Bachelor of Science in Modeling and Simulation Engineering	
Bachelor of Science in Engineering Technology	Civil Engineering Technology, Electrical Engineering Technology, Engineering Technology, Mechanical Engineering Technology
Master of Engineering	Aerospace Engineering, Civil Engineering, Electrical and Computer Engineering, Environmental Engineering, Experimental Methods, Mechanical Engineering, Motorsports Engineering, Modeling and Simulation, Systems Engineering
Master of Engineering Management	
Master of Science	Aerospace Engineering, Civil Engineering, Electrical and Computer Engineering, Engineering Management, Environmental Engineering, Mechanical Engineering, Modeling and Simulation
Doctor of Engineering	Aerospace Engineering, Civil and Environmental Engineering, Engineering Management and Systems Engineering, Mechanical Engineering, Modeling and Simulation
Doctor of Philosophy	Aerospace Engineering, Biomedical Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Engineering Management, Mechanical Engineering, Modeling and Simulation

## Health Sciences

Degree	Majors
Bachelor of Science in Dental Hygiene	
Bachelor of Science in Environmental Health	
Bachelor of Science in Health Sciences	
Bachelor of Science in Medical Technology	
Bachelor of Science in Nuclear Medicine Technology	
Bachelor of Science in Nursing	
Master of Public Health**	
Master of Science	Community Health, Dental Hygiene
Master of Science in Athletic Training	
Master of Science in Nursing	
Doctor of Nursing Practice	
Doctor of Philosophy	Health Services Research
Doctor of Physical Therapy	

## Sciences

Degree	Majors
Bachelor of Science	Biochemistry, Biology, Chemistry, Mathematics, Ocean and Earth Science, Physics, Psychology
Bachelor of Science in Computer Science	
Master of Science	Biology, Chemistry, Computational & Applied Mathematics, Computer Science, Ocean and Earth Sciences, Physics, Psychology
Doctor of Philosophy	Applied Experimental Psychology, Biomedical Sciences, Chemistry, Clinical Psychology, Computational & Applied Mathematics, Computer Science, Ecological Sciences, Human Factors Psychology, Industrial/Organizational Psychology, Oceanography, Physics

\* Diplomas will indicate the name of the degree only, not the major.

\*\* Awarded jointly with Eastern Virginia Medical School.

# Undergraduate Degree Requirements

## Overall Requirements for Baccalaureate Degrees

A candidate for a baccalaureate degree must present a minimum of 120 semester hours (except where otherwise noted in degree program descriptions). A minimum overall cumulative grade point average of C (grade point average of 2.00) must be made in all courses taken, and an overall cumulative grade point average of at least 2.00 must be attained in the major except in those programs requiring a grade point average above 2.00. Grades in all courses taken, including failing grades (except courses in which grade forgiveness was applied), are counted when calculating a student's cumulative grade point average. Grades in all courses taken in the major, including failing grades, are counted when calculating a student's grade point average in the major. Students completing a minor must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the minor.

A student who seeks a bachelor's degree from Old Dominion University must, in addition to meeting other requirements of the University, earn a minimum of 25 percent of the total number of credits required for the degree (for example, 30 credits in a 120-credit degree program) through on- or off-campus instruction. This must include a minimum of 12 credit hours of upper-level courses in the declared major program. Some program residency requirements exceed the University minimum. The responsibility for meeting the requirements for a degree rests with the student.

## College Requirements

Students should consult with the department of their major for further information regarding the following.

1. Major programs may require specific Skills or Ways of Knowing courses.
2. When requirement hours vary, major programs specify the number.
3. In addition to the University General Education Requirements, college requirements must be met. For example, the College of Arts and Letters and the Strome College of Business require foreign language proficiency at the fourth-semester level (202) for the Bachelor of Arts degree.

## Requirements for Major

Each undergraduate student shall select a major department or option at the appropriate time in his or her curriculum. In consultation with the head of his or her major department or a designee, such as the chief departmental advisor, the student shall select the courses for the major. At least 12 hours of upper-level course work in the declared major program must be taken at Old Dominion University in resident or extension study. All students must complete a writing intensive (W) course in the major at the upper-division level at Old Dominion University and earn a grade of C (2.0) or better.

## Additional Requirements for Baccalaureate Degrees

A student may not use courses in the discipline of his or her major to fulfill University General Education Requirements in the following Ways of Knowing areas: Human Behavior, Human Creativity and the Nature of Science.

Students should note that credit toward a degree cannot be obtained for material of what is essentially the same course, but offered in various introductory courses for different audiences. For example, a student receiving credit for BIOL 121N cannot receive credit for BIOL 105N or BIOL 110N.

## Evaluation of Writing Proficiency

All students following undergraduate degree programs must pass the University's Evaluation of Writing Proficiency. See the Undergraduate Writing Program Requirements section of this catalog for more information.

## Assessment Requirement

In response to demands by the University's accrediting agencies, including the Southern Association of Colleges and Schools – Commission on Colleges and the State Council on Higher Education for Virginia, Old Dominion University has developed an institution-wide plan to assess the quality of its academic programs and services. The plan calls for the assessment of student learning at the beginning, during, and at the end of the college experience.

Upon enrollment in the University and again prior to the completion of degree requirements, all undergraduate students must take one or more measures related to the University's assessment plan. Students will be notified about the requirement to complete the measures through their University email address. The email invitations will contain a link to the University's web-based assessment tool where the measures can be completed at the student's convenience. Assessment results are used for program improvements and thus are not a part of the student's transcript.

## Sanctions for Noncompliance with Assessment Testing Requirement

All undergraduate students are required to participate in the assessment program. Failure to take assessments when required to do so may preclude the student's right to register for the ensuing semester, or in the case of seniors, receive the baccalaureate degree.

The University will make all reasonable efforts to assure that students have ample opportunities to complete the required assessments. However, certain precautions will be taken to ensure that students submit to the assessment measures and that they take the measures seriously. Further information regarding sanctions procedures is available in offices of college deans and the University Assessment Office.

## University General Education Requirements

All students receiving baccalaureate degrees from Old Dominion University shall complete the University's General Education Program. At the lower division (freshman and sophomore), the program's designed courses develop the Skills (Goals 1-2 below) needed for later study and the Ways of Knowing (Goals 3-4) needed to understand the various approaches to knowledge at work in the University. At the upper division (junior and senior), Options B, C and D provide a multidisciplinary experience to broaden the student's ability to apply the Skills and Ways of Knowing at a more advanced level.

## General Education and Experiential Learning

All lower-level requirements within this program may be met by credit awarded to students who are able to demonstrate appropriate experiential learning that fulfills the objectives of the particular Skills and Ways of Knowing requirements. Though not all learning and experiences are worthy of being recognized with the reward of academic credit, the principle that supports the policy is that many valid learning experiences worthy of such credit do take place outside of the traditional classroom setting. For procedures to meet General Education Requirements in this manner, please consult the section of this Catalog on Experiential Learning Credit Options at the Undergraduate Level and visit the Experiential Learning web site at [www.uc.odu.edu/elt](http://www.uc.odu.edu/elt).

## General Education Philosophy

The General Education program at Old Dominion University represents the common core of the baccalaureate degree. It prepares students for pursuing a major, for broadening their views of life, and for understanding an increasingly global and diverse world. It provides students with the basic skills and intellectual perspectives to engage in the search for knowledge.

The General Education program develops analytical and critical thinking skills and the ability to make reasoned judgments. Students will also discover that learning is a complex, multifaceted, and lifelong endeavor.

## General Education Goals and Objectives

The Goals (1-5) and particular objectives of General Education are as follows:

1. Develop and demonstrate effective uses of language.
  - a. Develop written communication skills.
  - b. Develop oral communications skills.
  - c. Develop ability to use a foreign language and learn about another culture.
  - d. Develop written communication skills in the major at the upper-division level.
2. Develop mathematical and information literacy.
  - a. Develop basic mathematical competence.
  - b. Develop information literacy competence.
3. Develop an understanding of the natural sciences and technology and their contributions to human culture.
  - a. Understand the concepts and methods of the natural sciences.
  - b. Understand the nature of technology and its impacts on society and the environment.
4. Develop an understanding of human behavior, society and culture, with specific attention to technology, international perspectives and issues related to ethnicity, race and gender.
  - a. Develop an understanding of history and the ability to think critically about the past.
  - b. Think critically about beliefs, values, and moral issues that have shaped human society.
  - c. Critically analyze the fine and performing arts and their contribution to culture.
  - d. Critically analyze literature and its contribution to culture.
  - e. Develop an understanding of behavioral, political, economic, and social systems.
5. Integrate knowledge at the advanced level.
 

Option A. Complete a minor, second major or second degree.

Option B. Complete an interdisciplinary minor.

Option C. Complete international business and regional courses or an approved certification program such as teaching licensure.

Option D: Complete upper-division course work from another college or component (majors in the College of Arts and Letters may select from the Arts and Humanities component or the Social Sciences component depending on the major) outside of and not required by the major.

Students may not use courses in the discipline of their declared major to fulfill University General Education Requirements in the following Ways of Knowing areas: Human Behavior, Human Creativity and the Nature of Science.

Since the Skills and Ways of Knowing are needed for major courses and Upper-Division General Education, students should meet those requirements during their freshman and sophomore years.

## Transfer Policies for General Education Requirements

Students who have received an Associate in Arts (A.A.), Associate in Science (A.S.), or Associate in Arts and Sciences (A.A. and S.) degree from Richard Bland College or the Virginia Community College System (including the A.A. & S. in general studies) have met all General Education requirements except those specified as major or college requirements, requirements for completion of the undergraduate writing program, and the upper-division requirement that is met through completion of a second degree or major, a minor, an interdisciplinary minor, international business and regional courses, an approved certification program such as teaching licensure, or upper-division elective coursework from another college outside of and not required by the major. Effective Fall 2010, only the

A.S. degrees in general studies that are offered by those institutions whose general studies degrees are recognized as transfer degrees by the State Council of Higher Education for Virginia will be guaranteed acceptance as meeting lower-division General Education Requirements. A.S. degrees in general studies received from those institutions whose general studies degrees are not recognized by the State Council of Higher Education for Virginia will be examined individually to determine whether the degrees are university parallel programs and eligible for lower-division General Education requirement waivers. Students who have earned an Associate in Applied Science (A.A.S.) degree from the Virginia Community College System in specific articulated programs that include the required General Education courses have met all General Education requirements except the requirements for completion of the undergraduate writing program and the upper-level requirement. College-parallel programs at other community colleges or systems (consistent with the requirements of degrees from the Virginia Community College System) are also accepted as meeting lower-division General Education requirements and are reviewed by the Office of Undergraduate Admissions. Transfer students should be aware that even though University General Education Requirements may have been met, college, school and/or departmental requirements must still be met. Students must earn a grade of C (2.0) or better in order to receive the credit hours associated with classes taken at other regionally accredited institutions.

Policies governing the transfer of General Education Requirements can be found in the Admissions section of this catalog. See the transfer student website for the complete listing of articulation agreements at <http://uc.edu.edu/advising/transfer>.

## Lower-Division Requirements (freshman and sophomore years)

I. **Skills.** Completion of course work in the skills areas ensures that all students possess the basic tools with which to pursue their major interests.

A. **Written Communication -- Students are advised to consult the department of their major program and the Undergraduate Writing Program Requirements section of this catalog.**

ENGL 110C	English Composition (grade of C or better required)	3
Select one of the following:		3
ENGL 211C	English Composition (grade of C or better required)	
ENGL 221C	Introduction to Writing in Business, Education and Social Sciences (grade of C or better required)	
ENGL 231C	Introduction to Technical Writing (grade of C or better required)	

Undergraduate students must pass ENGL 110C with a grade of C (2.0) or better in order to qualify to register for ENGL 211C or ENGL 221C or ENGL 231C.

Students must also pass ENGL 211C or ENGL 221C or ENGL 231C with a grade of C (2.0) or better to qualify to register for a writing intensive (W) course.

Total Hours 6

### B. Oral Communication

Select one of the following courses		3
COMM 101R	Public Speaking	
COMM 103R	Voice and Diction	
COMM 112R	Introduction to Interpersonal Communication	
Total Hours		3

Students may meet this requirement by completing an oral communication course appropriate to the student's program of study or through an approved course(s) within the major. Students are advised to consult the department of their major program.

Majors approved to meet this requirement through major courses are: College of Arts and Letters – communication, foreign languages, foreign languages teacher preparation, music composition, music education, and all theatre concentrations except digital filmmaking; College of Education - human services; College of Health Sciences - medical technology, nursing, dental hygiene, health sciences health services administration concentration depending on elective choices, health sciences with human services minor depending on elective choices, and health sciences cytotechnology track; and College of Sciences - ocean and earth science.

### C. Mathematics

Select one of the following courses 3

MATH 101M	An Introduction to Mathematics for Critical Thinking
MATH 102M	College Algebra
MATH 103M	College Algebra with Supplemental Instruction
MATH 162M	Precalculus I
STAT 130M	Elementary Statistics

Total Hours 3

For the appropriate course, the major program should be consulted. Some programs require more advanced 200-level courses.

Students should strive to complete the mathematics General Education requirement within their first 30 hours at Old Dominion University and are expected to have completed the requirement before the end of their first 60 hours at the University. Students should be aware that waivers of the mathematics General Education requirement are not granted, and all students are required to complete this requirement before graduating.

**D. Language and Culture**—(does not apply to students earning high school diplomas before December 31, 1985).

Select 0-6 hours from the following courses 0-6

ARAB 111F	Beginning Arabic
CHIN 111F	Beginning Chinese
FARS 111F	Beginning Farsi
FR 101F & FR 102F	Beginning French I and Beginning French II
GER 101F & GER 102F	Beginning German I and Beginning German II
HEBR 111F	Beginning Hebrew I
ITAL 101F & ITAL 102F	Beginning Italian I and Beginning Italian II
JAPN 111F	Beginning Japanese
LATN 101F & LATN 102F	Beginning Latin I and Beginning Latin II
PRTG 101F & PRTG 102F	Beginning Portuguese I and Beginning Portuguese II
RUS 101F & RUS 102F	Beginning Russian I and Beginning Russian II
SPAN 101F & SPAN 102F	Beginning Spanish I and Beginning Spanish II
SPAN 121F	Intensive Beginning Spanish

Total Hours 0-6

111F courses are six credit hours each. Students may meet this requirement by successfully completing the third level in one foreign language or the second level in each of two foreign languages in high school or by completing a single foreign language at the 102F or 111F level or equivalent work from another institution. Students who have had some foreign language experience but are unable to be exempted from this requirement may complete just the 121F course in the case of Spanish or the 102F course in foreign languages if scores on the CEEB Foreign Language Achievement Test so indicate.

The College of Arts and Letters and the Strome College of Business require foreign language proficiency at the fourth-semester level for students pursuing Bachelor of Arts degrees.

Students whose native language is not English are exempt from taking a foreign language for General Education. Students pursuing degrees that require proficiency beyond the 100 level must be certified by the Foreign Languages and Literatures Department to obtain a waiver of the 200-400 level courses.

American Sign Language courses taken in high school or transferred to Old Dominion University from another institution are accepted by Old Dominion University to meet General Education requirements in language and culture. American Sign Language courses transferred from another institution are accepted to meet the foreign language requirement for B.A. degrees in the Strome College of Business and the College of Arts and Letters except for Asian Studies, foreign languages and international studies.

### E. Information Literacy and Research

Select one of the following courses 3

CS 120G	Introduction to Information Literacy and Research
CS 121G	Introduction to Information Literacy and Research for Scientists
HLTH 120G	Information Literacy for Health Professions
IT 150G	Basic Information Literacy and Research
PHIL 290G	Philosophy of Digital Culture
STEM 251G	Computer Literacy: Communication and Information

Total Hours 3

Students may meet this requirement in the major and are advised to consult the department of their major program.

Majors approved to meet this requirement through major courses are: College of Arts and Letters – African American and African Studies depending on elective choice, art education, art history, Asian Studies depending on elective choice, fine arts, geography, history, history teacher preparation, international studies depending on elective choice, political science, and studio art; College of Engineering and Technology - all majors except the general engineering technology concentration; and College of Health Sciences – dental hygiene and nursing.

**II. Ways of Knowing.** Courses in the Ways of Knowing develop the students' critical and analytical thinking abilities. They also develop understanding of the various approaches to knowledge, the contributions various academic disciplines can make to solving specific problems, and the effective use of the English language. Courses in the Ways of Knowing also develop and reinforce written communication skills and include relevant insights into technology. In addition, courses within each Way of Knowing focus on objectives unique to that way of knowing.

#### A. Human Behavior

The objective of this Way of Knowing is to enable students to learn about human behavior in changing contexts. The courses will address how ideological, scientific, and ethical judgments affect human behavior in Western and non-Western cultures. They will also offer perspectives on the challenges, concerns, and contributions of diverse groups such as women and minorities.

Courses that meet the human behavior Way of Knowing are:

Select one of the following courses 3

AAST 100S	Introduction to African American Studies
ANTR 110S	Introduction to Anthropology
COMM 200S	Introduction to Human Communication
CRJS 215S	Introduction to Criminology
ECON 200S	Basic Economics
ECON 201S	Principles of Macroeconomics

ECON 202S	Principles of Microeconomics
ENTR 201S	Introduction to Entrepreneurship
FIN 210S	Personal Financial Literacy
GEOG 100S	Cultural Geography
GEOG 101S	Environmental Geography
POLS 100S	Introduction to International Politics
POLS 101S	Introduction to American Politics
POLS 102S	Introduction to Comparative Government and Politics
PSYC 201S	Introduction to Psychology
PSYC 203S	Lifespan Development
SOC 201S	Introduction to Sociology
WMST 201S	Introduction to Women's Studies
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Total Hours	3

### B. Human Creativity

This Way of Knowing emphasizes artistic creative endeavor and appreciation and the history of the arts. The courses include field experience with the professional arts community in Hampton Roads as well as with the faculty of relevant departments. The objectives are to foster an appreciation of aesthetic experiences, develop abilities to make reasoned aesthetic judgments and develop an understanding of diverse cultures.

Courses that meet the human creativity Way of Knowing are:

Select one of the following courses		3
ARTH 121A	Introduction to the Visual Arts	
ARTS 122A	Visual Communication	
COMM/THEA 270A	Film Appreciation	
DANC 185A	Dance and Its Audience	
MUSC 264A	Music in History and Culture	
THEA 241A	The Theatre Experience	
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Total Hours	3	

### C. Interpreting the Past

The objective of this Way of Knowing is to provide an understanding of historical analysis for non-history majors.

Courses that meet the interpreting the past Way of Knowing are:

Select one of the following courses		3
HIST 100H	Interpreting the World Past Since 1500	
HIST 101H	Interpreting the Asian Past	
HIST 102H	Interpreting the European Past	
HIST 103H	Interpreting the Latin America Past	
HIST 104H	Interpreting the American Past	
HIST 105H	Interpreting the African Past	
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Total Hours	3	

### D. Literature

This Way of Knowing emphasizes the contribution of literature to culture. Through critical reading and analysis, students will develop an ability to make effective use of the English language and informed aesthetic judgments about style and content.

Select one of the following courses		3
ENGL 112L	Introduction to Literature	
ENGL 114L	American Writers, American Experiences	
FLET 100L	Understanding World Literature	
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Total Hours	3	

### E. The Nature of Science

This Way of Knowing requires two semesters of natural science. A student may fulfill the requirement with two non-sequential natural science classes with labs unless a sequence is specifically required for the major. These courses introduce the disciplines and the methods of science and develop the abilities to make reasoned judgments based on scientific considerations.

Courses that meet the nature of science way of knowing are:

Select two of the following courses		8
BIOL 105N	Biology for Nonscience Majors I	
BIOL 106N	Biology for Nonscience Majors II	
BIOL 110N & BIOL 111N	Environmental Sciences and Environmental Sciences Lab	
BIOL 112N & BIOL 113N	Environment and Man and Environment and Man Laboratory	
BIOL 117N & BIOL 118N	Introduction to Human Biology and Introduction to Human Biology Lab	
BIOL 121N & BIOL 122N	General Biology I and General Biology I Lab	
BIOL 123N & BIOL 124N	General Biology II and General Biology II Lab	
CHEM 105N & CHEM 106N	Introductory Chemistry and Introductory Chemistry Laboratory	
CHEM 107N & CHEM 108N	Introductory Organic and Biochemistry and Introductory Organic and Biochemistry Laboratory	
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	
CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	
CHEM 137N & CHEM 138N	Advanced General Chemistry I and II Lecture and Advanced General Chemistry I and II Laboratory	
OEAS 106N	Introductory Oceanography	
OEAS 108N	Understanding Global Climate Change	
OEAS 110N or OEAS 111N	Earth Science Physical Geology	
OEAS 112N	Historical Geology	
PHYS 101N	Conceptual Physics	
PHYS 102N	Conceptual Physics	
PHYS 103N	Introductory Astronomy	
PHYS 104N	Introductory Astronomy	
PHYS 111N	Introductory General Physics	
PHYS 112N	Introductory General Physics	
PHYS 231N	University Physics	
PHYS 232N	University Physics	
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Total Hours	8	

### F. Philosophy and Ethics

Because of the many decisions students will be called upon to make in their personal and professional lives, they will need an appreciation and understanding of philosophical, religious, and ethical foundations to help them to make informed, intelligent choices. Further, as the pace of change and interdependency in the world accelerates, it is important that students be given an ample opportunity to critically examine philosophy and ethical values and to understand how philosophical and ethical issues affect decision-making in professional disciplines.

Courses that meet the philosophy and ethics Way of Knowing are:

Select one of the following courses		3
PHIL 110P	Introduction to Philosophy	
PHIL 120P	Logic and Philosophy	

PHIL 140P	Introduction to Philosophy of Science
PHIL 230E	Introduction to Ethics
PHIL 250E	World Religions: Beliefs and Values
PHIL 303E	Business Ethics
PHIL 344E	Environmental Ethics
PHIL 345E	Bioethics
PHIL 442E	Studies in Applied Ethics
Total Hours	3

Students may meet this requirement in the major and are advised to consult the department of their major program. Majors approved to meet this requirement through major courses are: College of Arts and Letters – interdisciplinary studies concentrations in professional writing and work and professional studies depending on elective choice; College of Education – sport management; College of Engineering and Technology – all majors if ENMA 480 is completed; and College of Health Sciences – dental hygiene, dental hygiene degree completion, health sciences health services administration concentration depending on elective choices, and health sciences with human services minor depending on elective choices.

### G. Impact of Technology

It is important for students to understand not only how a technology functions, but also how technology affects society.

Courses in the impact of technology Way of Knowing are intended to develop students' abilities to make reasoned judgments about the impact of technological development upon world cultures and the environment as well as upon individuals and societies.

Courses that meet the impact of technology Way of Knowing are:

Select one of the following courses	3
COMM 372T	Introduction to New Media Technologies
CS 300T	Computers in Society
DNTH 440T	Telehealthcare Technology
EET 370T	Energy and the Environment
ENGL 307T	Digital Writing
GEOG 306T	Hazards: Natural and Technological
HIST 300T	The History of Sex and Sexual and Reproductive Technologies
HIST 304T	History of Medicine, Disease, and Health Technology
HIST 314T	Towers, Tanks and Time: Technology on the Eve of WWI
HIST 388T	Discovering Earth's History
HIST 389T	Technology and Civilization
HIST 386T/SCI 302T	The Evolution of Modern Science
IT 360T	Principles of Information Technology
MUSC 335T	Music Production: MIDI I
PHIL 383T	Technology: Its Nature and Significance
POLS 350T	Technology and War
STEM 110T	Technology and Your World
STEM 370T	Technology and Society
WMST 390T	Women and Technology Worldwide

The impact of technology way of knowing can also be met by major requirements. Students are advised to consult the department of their major program. Majors approved to meet this requirement through major courses are: College of Arts and Letters – communication depending on elective choice, dance education, English teacher preparation, fine arts and studio arts depending on elective choice, foreign languages teacher preparation, geography depending on elective choice, history depending on elective choice, history teacher preparation, interdisciplinary studies concentrations in music business/production and professional writing, interdisciplinary studies early childhood and special education, interdisciplinary studies

primary/elementary education, interdisciplinary studies concentration in work and professional studies depending on elective choice, all music majors; theatre education, and women's studies. College of Business—all majors except the B.A. in economics; College of Education—exercise science, health and physical education teacher preparation, all majors in occupational and technical studies; College of Engineering and Technology—all majors except civil engineering technology, general engineering technology and modeling and simulation engineering; College of Health Sciences—health sciences health services administration concentration depending on elective choices, and health sciences with human services minor depending on elective choices; College of Sciences - biology teacher preparation, chemistry teacher preparation, earth science education, mathematics teacher preparation and physics teacher preparation.

NOTE: For General Education requirements that can be met through the major (information literacy and research, impact of technology, oral communication, and philosophy and ethics), students who complete the required courses in their major that meet these requirements and then change to a major that does not meet the requirement through courses in the major will have met the requirement for the new major.

## Honors Courses that Meet General Education Requirements\*

### Skills

<b>Written Communication</b>		
ENGL 126C	Honors: English Composition	3
<b>Oral Communication</b>		
COMM 126R	Honors: Public Speaking	3
<b>Information Literacy and Research</b>		
CS 126G	Honors: Introduction to Information Literacy and Research	3

### Ways of Knowing

<b>Human Behavior</b>		
COMM 226S	Honors: Introduction to Human Communication	3
CRJS 226S	Honors: Introduction to Criminology	3
ECON 226S	Honors: Principles of Macroeconomics	3
ECON 227S	Honors: Principles of Microeconomics	3
GEOG 126S	Honors: Cultural Geography	3
POLS 126S	Honors: Introduction to American Politics	3
POLS 127S	Honors: Introduction to International Politics	3
PSYC 226S	Honors: Introduction to Psychology	3
SOC 226S	Honors: Introduction to Sociology	3
WMST 226S	Honors: Women in A Changing World	3

### Human Creativity

ARTS 126A	Honors: Art as Experience	3
ARTH 127A	Honors: Introduction to the Visual Arts	3
COMM 227A	Honors: Film Appreciation	3
MUSC 126A	Honors: Music in History and Culture	3
THEA 227A	Honors: Film Appreciation	3

### Interpreting the Past

HIST 126H	Honors: Interpreting the American Past	3
HIST 127H	Honors: Interpreting the European Past	3

### Literature

ENGL 127L	Honors: Introduction to Literature	3
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### The Nature of Science

BIOL 136N & BIOL 137N	Honors General Biology I and Honors General Biology I Lab	4
BIOL 138N & BIOL 139N	Honors General Biology II and Honors General Biology II Lab	4
OEAS 126N	Honors: Introductory Oceanography	4
PHYS 126N & PHYS 127N	Honors: Introductory Astronomy and Honors: Introductory Astronomy	8

PHYS 226N & PHYS 227N	Honors: University Physics and Honors: University Physics	8
<b>Philosophy and Ethics</b>		
PHIL 126P	Honors: Introduction to Philosophy	3
PHIL 127P	Honors: Introduction to Philosophy of Science	3
PHIL 227E	Honors: World Religions: Beliefs and Values	3
PHIL 228E	Honors: Introduction to Ethics	3

\* Courses listed are open only to students in the Honors College.

## Upper-Division Requirements (junior and senior years)

### Writing Intensive Course in the Major

All students are required to demonstrate written communication skills in the major by taking a Writing Intensive (W) course at the upper-division level. All undergraduate students must complete their W course in the major (3 credits) at Old Dominion University and earn a grade of C (2.0) or better in order to earn a baccalaureate degree.

Criteria for Writing Intensive courses include:

1. Students will demonstrate, in a series of individual (not group) assignments, their mastery of the subject in a discipline, through the writing of formal documents.
2. For each writing assignment, the instructor will provide feedback to the student, evaluating content and writing style (organization, development, logic, coherence and mechanics).
3. Types of documents for writing assignments include essays, laboratory reports, project reports, critiques of performances, research proposals, case studies, journal article reviews, book reviews, creative writing, written interviews, and other forms appropriate to a particular discipline.
4. A maximum of 10% total of identified graded writing in the form of essays for tests, quizzes, and/or a mid-term examination (not a final exam) may be included. It is to be evaluated for both content and writing style as indicated in (b) above.
5. Graded writing requirements comprise at least 51% of the overall course grade.

### Upper-Division Studies Outside the Major

Students are required to complete Option A, B, C or D to meet the upper-division general education requirement. In addition to the completion of courses in the area of the major field, a candidate for a baccalaureate degree may select Option A, any University-approved minor, second degree or second major. The minor may be chosen to support the major, to offer greater job opportunities to the student on graduation, or to provide academic recognition of study in a second disciplinary area. A baccalaureate degree candidate may also choose an integrative disciplinary experience through the selection of Option B, an Interdisciplinary Minor; Option C, International Business and Regional Courses or an approved Certification Program such as Teaching Licensure; or Option D, six hours of elective upper-division course work from outside of and not required by the student's major and college.

#### Option A: Any University-approved minor\* (minimum of 12 hours determined by the department), second degree, or second major

Students who complete the course requirements for the minor, but who do not attain a 2.00 grade point average in the minor, may request that the course work be approved to meet the upper-division general education requirement. The request may be initiated through the student's advisor and the associate dean of their college and submitted to the assistant vice president for undergraduate studies in the Office of Academic Affairs. Students whose requests are approved will meet the upper-division requirement, but they will not receive credit for the minor.

\* Bachelor of Science in Business Administration majors pursuing a minor or second major in the Strome College of Business other than Economics, Military Leadership (minor only) or Public Service (minor only) must also take six hours of 200-400 level courses outside the College, or in economics, or in military leadership or in study abroad. Students majoring in Economics who pursue a minor or second major in the Strome College of Business fulfill upper-division general education requirements and do not need to take the six hours of 200-400 level courses outside the College.

#### Option B: Any University-approved interdisciplinary minor (specifically 12 hours, three of which may be in the major)

Three credit hours in the interdisciplinary minor may be in the major if a major course is listed as an option for the interdisciplinary minor. As such, it will be credited toward both the major and the interdisciplinary minor. Interdisciplinary minors require 12 credit hours of 300/400-level courses selected from at least two different disciplines with a maximum of six credits from any one discipline. Course substitutions may be approved by the interdisciplinary minor coordinator.

Approved interdisciplinary minors are as follows.

#### Administrative Leadership and Ethics for Professional Roles Interdisciplinary Minor

James Van Dore, Department of Philosophy and Religious Studies, Coordinator

The intent of the Administrative Leadership and Ethics for Professional Roles interdisciplinary minor is to develop management-related skills. The minor is designed to improve the student's professionalism through an understanding of applied ethics, effective communication, processes in organizations, applied psychology, and legal issues in the workplace. An appreciation for the qualities of leadership, the functions of administration, and a sensitivity for ethical decision making will allow the student to apply for a wider variety of positions.

Course options are as follows:

CHP 400	Ethics in Health Administration	3
CHP 450	Public and Community Health Administration	3
CHP 480	Health Ethics and the Law	3
COMM 351	Interpersonal Communication in Organizations	3
DNTH 416	Administrative Leadership and Professional Development	3
ENGL 486	Media Law and Ethics	3
ENVH 402W	Environmental Health Administration and Law	3
HLTH 425	Leadership and Management for Health Professionals	3
MEDT 403W	Management in the Clinical Setting	3
MGMT 325	Contemporary Organizations and Management	3
MGMT 350	Employee Relations Problems and Practices	3
MKTG 414	Ethics and Social Issues in Administration	3
NMED 475W	Administration and Management in Nuclear Medicine Technology	3
NURS 480W	Leadership and Management	3
NURS 490W	Nursing Leadership	3
PAS 301	Ethics, Governance and Accountability in Public Service	3
PHIL 303E	Business Ethics	3
PHIL 345E	Bioethics	3
PSYC 303	Industrial/Organizational Psychology	3
SMGT 450W	Ethics and Morality in Sport	3



## Biomedical Engineering Interdisciplinary Minor

Christian Zemlin, Department of Electrical and Computer Engineering, Coordinator

This interdisciplinary minor is for students who would like to learn about processes encountered in biomedical engineering innovation and enhance their ability to integrate knowledge from different disciplines with principles used in biomedical engineering. The minor offers an opportunity for students to be recognized for study in this growing multidisciplinary field and to enhance competitiveness for job opportunities upon graduation.

Course requirements are as follows:

BME 401 & BME 402	Biomedical Engineering I: Principles and Biomedical Engineering II: Applications	6
Select two elective courses from the following:		6
BIOL 446	Comparative Biomechanics	
BIOL 460	Frontiers in Nanoscience and Nanotechnology	
BIOL 490	Advanced Human Physiology	
BIOL/MAE 496	Topics (approved by minor advisor)	
CHEM 443	Intermediate Biochemistry	
EXSC 322	Anatomical Kinesiology	
EXSC 417W	Biomechanics	
ECE 454	Introduction to Bioelectronics	
ECE 462	Introduction to Medical Image Analysis (MIA)	
MAE 303	Mechanics of Fluids	
MAE 440	Introduction to Finite Element Analysis	
MATH 316	Introductory Linear Algebra	
MEDT 324	Clinical Instrumentation and Electronics	
MGMT 325	Contemporary Organizations and Management	
MSIM 451	Analysis for Modeling and Simulation	
NMED 331	Fundamental Concepts in Nuclear Medicine Technology	
NURS 458	Studies in Professional Nursing	

Students have the option to substitute one course from those that satisfy their major requirements for one of the minor electives with approval of the minor coordinator.

Students interested in medical simulation are encouraged to select their electives from ECE 462, MAE 440 and MATH 316.

## Children's Rights Interdisciplinary Minor

Karen Polonko, Department of Sociology and Criminal Justice, Coordinator

This interdisciplinary minor is focused on the exploration of child rights within and across diverse disciplines and in the U.S. and internationally. This perspective challenges approaches in the various disciplines that have in their study of children traditionally denied or failed to recognize children's human rights and dignity. In place of the traditional perspectives, courses in this interdisciplinary minor frame the study of children within the larger framework of human rights, more specifically, children's rights and status as a group within society in social science research and theory, literature, the arts, humanities, education, counseling, law and public policy.

Course options are as follows:

COMM 427	Children's Communication Theory and Research	3
CRJS/SOC 403	Violence in the World of Children	3
CRJS/SOC 408	Children's Rights and the Law	3
HMSV 448	Interventions and Advocacy with Children	3
PSYC 351	Child Psychology	3
SOC 402	Sociology of Child Welfare	3

TLED 476

Practical Applications in the World of Children

3

## The Designed World Interdisciplinary Minor

Ken Daley, Department of Art, Coordinator

This interdisciplinary minor explores the interwoven historical, cultural, aesthetic, perceptual, and technical domains of the designed world. That virtually all aspects of the human-built world are designed is a generally accepted belief; however, it is not given the careful scrutiny it deserves. Creative planning and critical analysis of design dynamics are emphasized within the context of these course offerings.

Course options are as follows:

ARTH 320W	History of Design	3
ARTH 435W	Modern Architecture	3
ARTH 439	Art Between the Wars: 1919-1939	3
ENGL 382	Reporting News for Television and Digital Media	3
ENGL 477	Language, Gender and Power	3
GEOG 310	Geography of the City	3
GEOG 412	Cities of the World	3
PSYC 344	Human Factors	3
PSYC 413	Sensation and Perception	3
SEPS 303	Social Aspects of Clothing	3
SEPS 422	Fashion Product Development	3
SEPS 423	Visual Merchandising and Display	3
STEM 382	Industrial Design	3
STEM 386	Architecture	3
STEM 417	Exploring Technology and Modern Industry	3

## Environmental Issues and Management Interdisciplinary Minor

James English, Department of Community and Environmental Health, Coordinator

Continuing environmental degradation is a worldwide problem threatening the quality of life and its viability. The problem can only be understood and addressed by drawing upon the resources of multidisciplinary approaches. The multidisciplinary perspective center of this minor focuses on the human dimensions of the human-environment equation and includes geographical and ecological approaches, scientific and technological methodologies, planning and public policy issues, and ethical, political, economic, and legal considerations.

Course options are as follows:

CEE 350	Environmental Pollution and Control	3
CEE 458	Sustainable Development	3
ECON 435	Health Economics: A Global Perspective	3
ECON 447W	Natural Resource and Environmental Economics	3
ENVH 301W	Environmental Health	3
ENVH 402W	Environmental Health Administration and Law	3
ENVH 420	Communicable Diseases and Their Control	3
ENVH 421	Food Safety	3
ENVH 422	Water and Wastewater Technology	3
GEOG 305	World Resources	3
GEOG 306T	Hazards: Natural and Technological	3
GEOG 400W	Seminar in Geography	3
GEOG 420	Marine Geography	3
GEOG 422W	Coastal Geography	3
OEAS 302	Environmental Geology	3
OEAS 310	Global Earth Systems	3

PAS 300	Foundations of Public Service	3
PHIL 344E	Environmental Ethics	3
PHIL 345E	Bioethics	3
POLS 300	Introduction to Public Policy	3
POLS 335	Environmental Politics	3
POLS 401	Global Environmental Policy	3
PRTS 405	Outdoor Recreation	3
SOC 309	Population and Society	3
SOC 320	Social Inequality	3
SOC 325	Social Welfare	3
SOC 440	Health, Illness, and Society	3
SOC/CRJS 444	Community Justice	3

## Health and Wellness Interdisciplinary Minor

Laura Hill, Department of Human Movement Sciences, Coordinator

The Health and Wellness interdisciplinary studies minor explores personal involvement in and commitment to health and wellness and the factors that influence the health status of individuals and society. This interdisciplinary minor also fosters an appreciation for personal responsibility for health and strategies to enhance and preserve the individual's and the public's health. Societal health and the factors that impact on the health and wellness of a community and the individual's role in health policy are examined. Students gain an awareness of the cultural, psychological, sociological and ethical issues affecting and effected by the health and wellness of individuals and the society in which they live.

Course options are as follows:

CHP 360	Introduction to Global Health	3
CHP 400	Ethics in Health Administration	3
CHP 420	Foundations of Gerontology	3
CHP 425	Health Aspects of Aging	3
CHP 456	Substance Use and Abuse	3
CHP 465	Policy and Politics of Health	3
CHP 470	Death, Dying and Survivorship	3
CRJS 401	Understanding Violence	3
CRJS/SOC 421	Deviant Behavior	3
CRJS/SOC 427	Violence Against Women	3
CRJS/SOC 441	Drugs and Society	3
EXSC 403	Lifetime Fitness and Wellness	3
EXSC 408	Nutrition for Fitness and Sport	3
EXSC 415	Exercise Testing for Normal and Special Populations	4
HE 402	Methods and Materials in Health Education	3
HPE 430	Teaching Wellness and Health-Related Fitness	3
HMSV 341	Introduction to Human Services	3
HMSV 491	Family Guidance	3
PE 300	Management Skills for Teaching Health and Physical Education	3
PE 319	Physical Growth and Motor Development	3
PE 409	Physiology of Exercise	3
PHIL 345E	Bioethics	3
PSYC 306	Health Psychology	3
PSYC 325	Drugs and Behavior	3
PSYC 351	Child Psychology	3
PSYC 352	Cognitive Development During Childhood	3
PSYC 353	The Psychology of Adulthood and Aging	3
PSYC 363	Psychology of Sex	3
PSYC 405	Abnormal Psychology	3
PSYC 408	Theories of Personality	3
PSYC 410	Human Cognition	3

PSYC 420	Cross-Cultural Psychology	3
PSYC 424	Physiological Psychology	3
PSYC 431	Community Psychology	3
PSYC 460	Psychology of African Americans	3
PSYC 461	Drug Abuse and Dependence	3
SOC 440	Health, Illness, and Society	3
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3

## The Impact of Technology Interdisciplinary Minor

Philip A. Reed, Department of STEM Education and Professional Studies, Coordinator

This interdisciplinary minor develops a broader understanding of technology and its impact on individuals, societies, and the environment. It provides the social context and the historical and philosophical backgrounds needed by informed students to evaluate technology and its impacts. The minor equips students with skills to make better personal decisions about technology and more appropriate choices for their futures.

Course options are as follows:

CHP 360	Introduction to Global Health	3
COMM 340	Media and Popular Culture	3
COMM 372T	Introduction to New Media Technologies	3
COMM 400W	Intercultural Communication	3
COMM 401	Communication Theory	3
COMM 448	Transnational Media Systems	3
CS 300T	Computers in Society	3
CS 312	Internet Concepts	3
ECON 402	Transportation Economics	3
ECON 454W	Economic Development	3
ENGL 380	Reporting and News Writing I	3
ENGL 382	Reporting News for Television and Digital Media	3
ENGL 480	Investigative Reporting Techniques	3
ENVH 301W	Environmental Health	3
ENVH 402W	Environmental Health Administration and Law	3
GEOG 305	World Resources	3
GEOG 306T	Hazards: Natural and Technological	3
HIST 304T	History of Medicine, Disease, and Health Technology	3
HIST 389T	Technology and Civilization	3
HIST 386T/SCI 302T	The Evolution of Modern Science	3
IT 360T	Principles of Information Technology	3
MUSC 335T	Music Production: MIDI I	3
OPMT 303	Operations Management	3
PHIL 355	Computer Ethics	3
PHIL 383T	Technology: Its Nature and Significance	3
POLS 350T	Technology and War	3
SOC 352	War and Peace	3
STEM 370T	Technology and Society	3
STEM 382	Industrial Design	3
STEM 417	Exploring Technology and Modern Industry	3
WMST 390T	Women and Technology Worldwide	3

## The Urban Community Interdisciplinary Minor

Christopher B. Colburn, Department of Economics, Coordinator

This interdisciplinary minor encourages an interdisciplinary approach to the problems and crucial issues that emerge from urban environments. Students gain an understanding of the issues associated with the convergence of diverse populations in urban locations and acquire an appreciation of the

complexities of the interlocking and contingent nature of urban problems. This will be accomplished through an examination of the topical areas of common space, diversity, urban services, disorder, and work.

Course options are as follows:

ARTH 435W	Modern Architecture	3
CHP 415W	Critical Issues in Public/Community Health Administration	3
COMM 467	Media, Politics and Civic Engagement	3
CRJS 323	Police in American Society	3
CRJS 325	Women and Crime	3
CRJS 355	Crime and the Community	3
CRJS 441	Drugs and Society	3
ECON 402	Transportation Economics	3
ECON 445W	Urban Economics	3
GEOG 310	Geography of the City	3
GEOG 411	Urban and Regional Planning	3
GEOG 412	Cities of the World	3
PSYC 431	Community Psychology	3
PRTS 433	Community Recreation	3
SOC/CRJS 444	Community Justice	3

### World Cultures: Values and Visions Interdisciplinary Minor

Luis Guadano, Department of Foreign Languages and Literatures, Coordinator

The World Cultures: Values and Vision interdisciplinary minor requires 12 credit hours of 300/400-level courses selected from at least two different disciplines with a maximum of six credits from any one discipline. For completion of the interdisciplinary minor, students must have a minimum overall cumulative grade point average of 2.00 in ALL courses required for the minor exclusive of lower-level courses and prerequisite courses. At least six hours of upper-level courses must be taken through courses offered by Old Dominion University. Three credit hours may be in the major, if a major course is listed as an option for the interdisciplinary minor. As such, it will be credited toward both the major and the interdisciplinary minor.

This interdisciplinary minor develops an understanding of human behavior in different cultures. In order to interpret information from other countries and ethnic groups, students need to learn that certain common notions such as perceptions of personhood, the organization of time and space, and the appropriate organization and behavior of social groups vary from country to country. This minor will explore different cultural perspectives and value systems. Students should emerge with a more sophisticated understanding of their own and others' cultures.

Course options are as follows:

ANTR 304	Digging Up the Past	3
ANTR 305	North American Archaeology	3
ANTR 320	The Sexes in Cross-Cultural Perspective	3
COMM 400W	Intercultural Communication	3
COMM 444/ GER 445/FLET 445	German Cinema	3
ENGL 371W	Communication Across Cultures	3
FLET 307	Understanding European Film	3
FLET/JAPN 310	Japan: A Cultural Odyssey	3
FLET/FR/GER 410	Berlin-Paris: Crucibles of European Ideas	3
FLET/SPAN 471	Hispanic Women Authors	3
FLET/GER 476	German-Jewish Literature and Culture	3
FR 320	Contemporary France through the Media	3
FR 438	Studies in Twentieth-Century French Literature	3
FR 469	A History of French Cinema	3

GEOG 451	Europe	3
GEOG 452	Africa	3
GEOG 453	Asia	3
GEOG 455	The Middle East	3
GEOG 456	Geography of Southeast Asia	3
IT 425	Information Systems for International Business	3
MGMT 361	International Business Operations	3
MKTG 411	Multi-National Marketing	3
PHIL 354	Comparative Philosophy East and West - Personhood	3
POLS 325W	World Politics	3
PSYC 420	Cross-Cultural Psychology	3
SPAN 320	Spanish Culture and Civilization	3
SPAN 471	Hispanic Women Authors	3

Study Abroad: Any study abroad course at the 300-400 level that offers three credits can fulfill one course requirement for this minor. In cases where a study abroad course fits the themes of another interdisciplinary minor, students may request approval from the minor coordinator to use that study abroad course.

### Option C: International Business and Regional Courses or an approved Certification Program such as Teaching Licensure.

The international business and regional courses option requires ECON 450: International Economics and six hours of approved courses from a selected regional focus described below.

#### Asian Focus

Select two of the following:		6
ASIA 460	Major Issues in Asia	
GEOG 453	Asia	
HIST 332	South Asia Since Independence	
HIST 336	The Emergence of New China	
HIST 439	Politics and Society in East Asia Since 1945	
POLS 338W	Politics of East Asia	
POLS 437	International Relations in East Asia	

#### European Focus

Select two of the following:		6
GEOG 451	Europe	
FLET/FR/GER 410	Berlin-Paris: Crucibles of European Ideas	
HIST 316	Cold War in History	
POLS 314	European Politics	
POLS 332W	Europe in World Affairs	

#### Latin American Focus

Select two of the following:		6
GEOG 454W	Latin America	
HIST 373	U.S.-Latin American Relations	
HIST 470	Democracy and Development in Modern Latin America	
HIST 371	Modern Mexico	
HIST 372	Central America and the Caribbean Since 1800	
POLS 337	Latin American Politics	
SPAN 321	Latin American Culture and Civilization	

For more information contact Bruce M. Seifert, Department of Finance.

Option C can also be met through an approved certification program such as teaching licensure. The professional education requirements specified for teaching licensure programs meet this option.

## Option D: Upper-Division Course Work from Another College Outside of and not Required by the Major

Six hours of elective upper-division course work from outside of and not required by the student's major and college. Transfer courses and study abroad courses may be used to meet this requirement. Military Science and Leadership courses (MSL) and Naval Science courses (NAVS) may be used to meet the Option D requirement for all students, regardless of the student's major and college. Upper-division courses elected to meet the Philosophy and Ethics and Impact of Technology Ways of Knowing areas may also meet the requirement but they must be outside the college and not required by the major.

In the College of Arts & Letters, courses are divided into two components: (1) Arts & Humanities and (2) Social Sciences.

Arts and Letters majors will be permitted to take upper-division courses in their non-major component for this requirement or courses from another college.

By definition the Arts and Humanities component will include: Art, Dance, English, Foreign Languages, History, Music, Philosophy, and Theatre. The Social Sciences component will include: African-American Studies, American Studies, Asian Studies, Anthropology, Communication, Criminal Justice, Geography, International Studies, Political Science, Sociology, and Women's Studies.

Students must satisfy all prerequisites before enrolling in any upper-division course.

## Second Major

The University permits an undergraduate student to pursue a second major. A student pursuing two majors must meet all the degree requirements of one major and at least the departmental requirements of the other. (Most professional degree majors require completion of both the departmental/school and the college requirements.) Requirements for both majors must be completed prior to receiving the baccalaureate degree. The student will receive one baccalaureate degree. Both majors will appear on the transcript. The degree awarded will be determined by the major to which University and college requirements are applied. Prior to undertaking the second major, the student must have the program approved by the appropriate chief departmental advisor/chair and dean.

Completion of a second major will meet the upper-division General Education Requirements. Students pursuing two majors in the Strome College of Business may not use the second business major to satisfy the upper-division General Education requirement unless one of the majors is economics.

Students wishing to earn a second degree rather than a second major should see the "Second Baccalaureate Degree" section of the catalog.

## Second Baccalaureate Degree

The University will permit a student to acquire a second baccalaureate degree, provided that he or she:

1. Pursues a different course of study.
2. Meets all University, college, school, and departmental requirements (credits earned for the first degree may be applied, if suitable, toward the second degree).
3. Completes a minimum of 30 semester hours at Old Dominion University that are beyond the requirements for the first degree.

A minimum of 150 credit hours is required for students earning two baccalaureate degrees from Old Dominion University. If the degrees are to be awarded simultaneously, an application for graduation and degree certification must be submitted through the respective advisors for each degree program.

Prior to undertaking the second degree, the Office of Admissions will conduct an evaluation of all prior university-level coursework the student has completed. Those who meet the admissions standards of the University will be admitted; however, this does not guarantee admission into specific

degree programs where separate applications are required. The University, as a general rule, will not permit a student to pursue more than two baccalaureate degrees.

Second degree students are not required to take the Writing Sample Placement Test (WSPT) and are considered to have fulfilled the lower-division writing requirement and University General Education Requirements with the exception of the writing intensive (W) course in the major. Second degree students must complete the writing intensive course in the major at Old Dominion University and must earn a grade of C (2.0) or better. Students receiving two degrees from Old Dominion University must complete the writing intensive course in both majors and earn a grade of C or better in both courses.

All second degree students must meet the college/departmental requirements for both degrees even if some of these requirements are also general education courses.

Students who received their first degree from Old Dominion University should be aware that grades in all undergraduate courses (for both the first and the second degree) will be included in the cumulative grade point average.

Students wishing to earn a second major rather than a second degree should see the "Second Major" section of the catalog for information.

## Minors

In addition to the completion of courses in the area of the major field, a candidate for a baccalaureate degree may complete a minor. The completion of a minor is optional. The minor may be chosen to support the major, to offer greater job opportunities to the student on graduation, or to provide recognition of study in a second academic area. Completion of a University-approved minor will meet the upper-division General Education Requirements. Students who complete the course requirements for the minor, but who do not attain a 2.00 grade point average in the minor, may request that the course work be approved to meet the upper-division general education requirement. The request may be initiated through the student's advisor and the associate dean of their college and submitted to the assistant vice president for undergraduate studies in the Office of Academic Affairs. Students whose requests are approved will meet the upper-division requirement, but they will not receive credit for the minor.

For completion of a minor, an undergraduate student must have the following:

1. A minimum of 12 credit hours in a specified minor, normally at the 300 and 400 upper-level.
2. An overall grade point average of 2.0 or above in all courses specified as a requirement in the minor exclusive of prerequisite courses. All 300-, 400-, and approved 200-level courses designated for the minor and taken by the student will be calculated in the student's grade point average for the minor. For example, if the minor requires four courses at the 300- and 400- level and the student completes five courses, all five courses will be included in the calculation of the grade point average for the minor.
3. Six credit hours in the minor from Old Dominion University. No course that is introductory or foundational, or that meets a lower level General Education requirement, may be included, although such courses may be prerequisites for courses in the minor.

Minors may be proposed by departments and programs and must be approved by the appropriate college committee and dean, by Faculty Senate Committee A and by the provost and vice president for academic affairs. Interdisciplinary minors must be reviewed by all colleges and departments involved prior to submission to Committee A of the Faculty Senate. Three credit hours in the interdisciplinary minor may be in the major, if a major course is listed as an option for the interdisciplinary minor. As such, it will be credited toward both the major and the interdisciplinary minor. Interdisciplinary minors require 12 credit hours of 300/400-level courses selected from at least two different disciplines with a maximum of six credits from any one discipline.

Specific minor requirements may be found in the section on Colleges, Schools and Departments of Instruction in this catalog.

## Procedures

Students who wish to pursue a minor must declare the minor with and be advised by the department offering the minor, their site director, or the distance learning representative. Students completing a minor should present the minor for certification when submitting applications for graduation.

Following are approved academic minors:

### Arts and Letters

- African-American Studies (p. 95)
- American Studies (p. 91)
- Art History (p. 96)
- Asian Studies (p. 104)
- Chinese Studies (p. 124)
- Communication (p. 109)
- Criminal Justice (p. 157)
- English (p. 117)
- European Studies (p. 123)
- Film and Video Studies (p. 92)
- Foreign Languages and Literatures (p. 123)
  - French
  - German
  - Spanish
- Geography (p. 155)
- Geography—Environment and Resources Specialization (p. 155)
- History (p. 128)
- International Studies (p. 139)
- Japanese Studies (p. 124)
- Jewish Studies (p. 92)
- Latin American Studies (p. 123)
- Middle Eastern Studies (p. 92)
- Music Composition (p. 149)
- Music History (p. 149)
- Music Performance (p. 149)
- Philosophy (p. 151)
- Philosophy—Applied Ethics Specialization (p. 151)
- Philosophy—Religious Studies Specialization (p. 151)
- Philosophy—Political and Legal Studies Specialization (p. 151)
- Political Science (p. 154)
- Political Science—Public Law Specialization (p. 154)
- Sociology (p. 157)
- Sociology—Social Welfare Specialization (p. 157)
- Studio Arts (p. 99)
- Theatre and Dance—Theatre Specialization (p. 113)
- Theatre and Dance—Dance Specialization (p. 111)
- Women's Studies (p. 159)

### Business

- Accounting (p. 172)
- Business Administration (p. 171)
- Business Analytics (p. 173)
- Economics (p. 165)
- Financial Management (p. 176)
- Financial Management - Real Estate (p. 176)
- Financial Management - Risk Management and Insurance (p. 176)
- Information Systems and Technology (p. 178)
- International Business (p. 181)
- Management (p. 181)

- Marketing (p. 183)
- Maritime and Supply Chain Management (p. 182)
- Military Leadership (p. 184)
- Public Service (p. 171)

### Education

- Coaching Education (p. 197)
- Exercise Science (p. 197)
- Fashion Merchandising (p. 204)
- Health Education (p. 197)
- Human Services (p. 192)
- Marketing Education (p. 205)
- Park, Recreation and Tourism Management (p. 197)
- Secondary Education (professional education requirements) (p. 207)
- Special Education (p. 189)
- Speech-Language Pathology and Audiology (p. 191)
- Sport Management (p. 197)
- Therapeutic Recreation (p. 197)
- Training and Development (p. 205)

### Engineering and Technology

- Aerospace Engineering (p. 228)
- Civil Engineering (p. 228)
- Civil Engineering Technology—Construction (p. 228)
- Computer Engineering (p. 229)
- Electrical Engineering (p. 229)
- Electrical Engineering Technology (p. 229)
- Engineering Management (p. 230)
- Environmental Engineering (p. 230)
- Global Engineering (p. 230)
- Marine Engineering (p. 231)
- Mechanical Engineering—Mechanics (p. 231)
- Mechanical Engineering—Thermal Sciences (p. 231)
- Mechanical Engineering Technology (p. 231)
- Military Leadership (p. 231)
- Modeling and Simulation (p. 231)
- Motorsports Engineering (p. 232)

### Health Sciences

- Community Health (p. 238)
- Environmental Health (p. 234)
- Medical Technology (p. 244)
- Occupational Safety (p. 235)

### Sciences

- Biology (p. 260)
- Chemistry (p. 264)
- Computer Science (p. 267)
- Mathematics—Actuarial Mathematics Option (p. 270)
- Mathematics—Applied Mathematics Option (p. 270)
- Mathematics—Statistics/Biostatistics Option (p. 270)
- Ocean and Earth Science (p. 275)
- Physics (p. 280)
- Psychology (p. 283)
- Web Programming (p. 267)

### Interdisciplinary Minors

- Administrative Leadership and Ethics for Professional Roles
- Biomedical Engineering
- Children's Rights
- The Designed World

- Environmental Issues and Management
- Health and Wellness
- The Impact of Technology
- The Urban Community
- World Cultures: Values and Visions

# General Education Transfer Equivalents

## Written Communication Skills (6 credits)

ENGL 110C	English Composition	ENG 111
ENGL 211C	English Composition	ENG 112 or 210
ENGL 231C	Introduction to Technical Writing	ENG 115 or 131

## Oral Communication Skills (0-3 credits)

COMM 101R	Public Speaking	CST 100, 105, or 110
COMM 103R	Voice and Diction	CST 111 or 112
COMM 112R	Introduction to Interpersonal Communication	CST 126

Requirement can also be met by approved course in the major.

## Mathematical Skills (3 credits)

MATH 101M	An Introduction to Mathematics for Critical Thinking	MTH 122, 152, or 182
MATH 102M/103M	College Algebra	MTH 158
MATH 162M	Precalculus I	MTH 163
MATH 163	Precalculus II	MTH 164
MATH 166	Precalculus I and II	MTH 166
STAT 130M	Elementary Statistics	MTH 146, 157, 240, 241, or 242

## Language and Culture Skills (0-6 credits)

ARAB 111F	Beginning Arabic	ARA 101 and 102
CHIN 111F	Beginning Chinese	CHI 101 and 102
FR 101F & FR 102F	Beginning French I and Beginning French II	FRE 101 and 102
GER 101F & GER 102F	Beginning German I and Beginning German II	GER 101 and 102
HEBR 111F	Beginning Hebrew I	none
ITAL 101F & ITAL 102F	Beginning Italian I and Beginning Italian II	ITA 101 and 102
JAPN 111F	Beginning Japanese	JPN 101 and 102
LATN 101F & LATN 102F	Beginning Latin I and Beginning Latin II	LAT 101 and 102
PRTG 101F & PRTG 102F	Beginning Portuguese I and Beginning Portuguese II	none
RUS 101F & RUS 102F	Beginning Russian I and Beginning Russian II	RUS 101 and 102
SPAN 101F	Beginning Spanish I	SPA 101 or 105 and 106
SPAN 102F	Beginning Spanish II	SPA 102 or 107 and 108
Language and Culture Skills I and II (LC 1REQ and 2REQ)		VTN 101 and 102, GRE 101 and 102, HIN 101 and 102, KOR 101 and 102, ASL 101 and 102

## Information Literacy and Research (0-3 credits)

IT 150G	Basic Information Literacy and Research	ITE 119
CS 120G	Introduction to Information Literacy and Research	ITE 119
STEM 251G	Computer Literacy: Communication and Information	ITE 119 or ETR 160

Requirement can also be met by approved course in the major.

## Literature Way of Knowing (3 credits)

ENGL 112L	Introduction to Literature	ENG 125
ENGL 114L	American Writers, American Experiences	none
FLET 100L	Understanding World Literature	none
Literature Way of Knowing (LIT 1REQ)		ENG 236, 237, 241, 242, 243, 244, 245, 246, 251, 252, 253, 254, 255, 256, 267, or 268

## Human Creativity Way of Knowing (3 credits)

ARTH 121A	Introduction to the Visual Arts	ART 100, 111, or 112
ARTS 122A	Visual Communication	ART 113, 114
COMM 270A & THEA 270A	Film Appreciation and Film Appreciation	CST 151, 152, or 250
THEA 241A	The Theatre Experience	CST 130, 141, or 142
MUSC 264A	Music in History and Culture	MUS 121 or 122

DANC 185A	Dance and Its Audience	none
Human Creativity Way of Knowing (HC 1REQ)		ART 101, 102, 103, 104, 105, 106, 133, 150, 201, 202, HUM 100, 201, 202, 260, MUS 125, CST 231 or 232
<b>Philosophy and Ethics Way of Knowing (0-3 credits)</b>		
PHIL 110P	Introduction to Philosophy	PHI 100, 101, or 102
PHIL 120P	Logic and Philosophy	PHI 111, 112, or 115
PHIL 230E	Introduction to Ethics	PHI 220, 225, or 226
PHIL 250E	World Religions: Beliefs and Values	REL 230, 231, 232, or 237, PHI 260
Philosophy and Ethics Way of Knowing (PL 1REQ)		PHI 200, 211, 212, 227, 228, 265, or 276
Requirement can also be met by approved course in the major.		
<b>Interpreting the Past Way of Knowing (3 credits)</b>		
HIST 100H	Interpreting the World Past Since 1500	HIS 112
HIST 101H	Interpreting the Asian Past	HIS 253 or 254
HIST 102H	Interpreting the European Past	HIS 101 or 102
HIST 103H	Interpreting the Latin America Past	HIS 231 or 232
HIST 104H	Interpreting the American Past	HIS 121 or 122
HIST 105H	Interpreting the African Past	HIS 203 or 204
Interpreting the Past Way of Knowing (INTP 1REQ)		HIS 111
<b>Human Behavior Way of Knowing (3 credits)</b>		
AAST 100S	Introduction to African American Studies	HUM 220
ANTR 110S	Introduction to Anthropology	SOC 210, 211, or 212
COMM 200S	Introduction to Human Communication	none
CRJS 215S	Introduction to Criminology	ADJ 107, 201, or SOC 236
ECON 200S	Basic Economics	ECO 120
ECON 201S	Principles of Macroeconomics	ECO 201
ECON 202S	Principles of Microeconomics	ECO 202
ENTR 201S	Introduction to Entrepreneurship	BUS 116
GEOG 100S	Cultural Geography	GEO 210
GEOG 101S	Environmental Geography	GEO 200
POLS 100S	Introduction to International Politics	PLS 241 or 242
POLS 101S	Introduction to American Politics	PLS 130, 135, 211, or 212
POLS 102S	Introduction to Comparative Government and Politics	PLS 140
PSYC 201S	Introduction to Psychology	PSY 200, 201, or 202
PSYC 203S	Lifespan Development	PSY 230, 231, 232, 235 or 238
SOC 201S	Introduction to Sociology	SOC 200, 201, or 202
WMST 201S	Introduction to Women's Studies	SSC 210, HUM 210
Human Behavior Way of Knowing (HB 1REQ)		SOC 220 or 255, PLS 120
<b>Nature of Science Way of Knowing (8 credits)</b>		
BIOL 121N & BIOL 122N	General Biology I and General Biology I Lab	BIO 101
BIOL 123N & BIOL 124N	General Biology II and General Biology II Lab	BIO 102
CHEM 105N & CHEM 106N	Introductory Chemistry and Introductory Chemistry Laboratory	CHM 101 or 121
CHEM 107N & CHEM 108N	Introductory Organic and Biochemistry and Introductory Organic and Biochemistry Laboratory	CHM 102 or 122
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	CHM 111 and 112
CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	CHM 111 and 112
OEAS 110N	Earth Science	GOL 110 (required for teacher ed)
OEAS 106N	Introductory Oceanography	GOL 111
OEAS 111N & OEAS 112N	Physical Geology and Historical Geology	GOL 105 and 106
PHYS 101N & PHYS 102N	Conceptual Physics and Conceptual Physics	PHY 100 or 101 and 102
PHYS 103N & PHYS 104N	Introductory Astronomy and Introductory Astronomy	NAS 131 and 132



PHYS 111N & PHYS 112N	Introductory General Physics and Introductory General Physics	PHY 111 and 112 or 201 and 202
PHYS 231N & PHYS 232N	University Physics and University Physics	PHY 231 and 232 or 241 and 242
Nature of Science Way of Knowing (NS IREQ AND 2REQ)		BIO 106 and 107 or MAR 101 and 102 or ENV 121 and 122
Nature of Science Way of Knowing (NS IREQ)		BIO 114, 270, 278, CHM 126, GOL 112, 207 or 225, MAR 121, 122, 201, 202, NAS 101, 102, 110, 111, 112, 120, 125, or 130, PHY 130, SCT 111, 112

The complete transfer course database is available on the Transfer Student website found at <http://www.odu.edu/admission/undergraduate/transfer/transformation> under **Future Students**.

# College of Arts and Letters

Charles E. Wilson, Jr., Dean  
Janet E. Katz, Associate Dean  
David C. Earnest, Associate Dean for Graduate Studies and Research

## Mission

The College of Arts and Letters is committed to the ideals of the liberal arts. Its curriculum is designed to introduce students to the full range of human experiences through the study of cultural heritage, forms of artistic and literary expression, patterns of social and political behavior, and methods of critical inquiry.

The mission of the College of Arts and Letters is to prepare students for rigorous, intellectual and creative inquiry leading to their full development as human beings and to their responsible engagement with society. We accomplish this mission by:

1. Developing the essential skills of critical reading and thinking, effective oral and written communication, and proficient use of technology
2. Providing foundational knowledge in the arts, humanities and social sciences for all undergraduates
3. Offering excellent disciplinary and interdisciplinary programs of study and training that expose students to accumulated knowledge, scholarly debate, and innovations in the field
4. Fostering global awareness and sensitivity to the breadth and diversity of the human condition, which includes acquiring an understanding of the roles of gender, race, ethnicity, and culture
5. Providing an atmosphere for the free exchange of ideas among faculty and students and by vigorously defending academic and intellectual freedom
6. Promoting challenging internship opportunities, research projects, and collaborative learning experiences that connect our students to the community and prepare them for the world of work
7. Supporting a broad array of cultural experiences that enrich the lives of students, the University, and the community

## Overview

Undergraduate programs in the College of Arts and Letters are structured to make possible close personal contact between students and faculty and thus to meet the needs of individual students. Arts and Letters faculty members are dedicated to good teaching, proud of their achievements in research, and committed to enhancing in every way possible the exciting and stimulating environment that is Old Dominion University.

The College of Arts and Letters comprises the Departments of Art, Communication and Theatre Arts, English, Foreign Languages and Literatures, History, Music, Philosophy and Religious Studies, Political Science and Geography, Sociology and Criminal Justice, and Women's Studies; Interdisciplinary Studies; the Institute of Humanities; the Institute for the Study of Race and Ethnicity; the Institute of Asian Studies; the Institute for Ethics and Public Affairs; the Institute for the Advancement of Community Justice; Community Dance Programs; the Old Dominion University Community Music Division; the Social Science Research Center; and the Filipino American Center.

The College offers undergraduate degrees in African American and African Studies, Art History, Asian Studies, Communication, Criminal Justice, English, Foreign Languages, Geography, History, Interdisciplinary Studies, International Studies, Music, Philosophy, Political Science, Sociology, Studio Art, Theatre and Dance, and Women's Studies.

In addition to the Bachelor of Arts, Bachelor of Fine Arts, Bachelor of Music, and Bachelor of Science degrees offered by the above departments, the College of Arts and Letters offers a variety of accelerated and graduate degree programs. Accelerated programs allow students to count up to 12 hours of graduate courses toward both an undergraduate and graduate

degree making it possible to earn both a B.A. or B.S. and an M.A. in five years. Accelerated programs are available in applied linguistics, English, history, international studies, and humanities; concentrations in humanities are available in communication, individualized interdisciplinary studies, philosophy, and women's studies.

The College offers graduate degrees in Applied Linguistics, Applied Sociology, Creative Writing, Criminology and Criminal Justice, English, History, Humanities, International Studies, Lifespan and Digital Communication, and Music Education. Please refer to the Graduate Catalog for more information.

## Undergraduate Degree Requirements

Arts and Letters requirements for all undergraduate degrees include all of the General Education Requirements. In addition, all Arts and Letters majors must obtain a minimum grade of C in ENGL 110C English Composition before declaring a major and in order to graduate. Arts and Letters majors must also attain a minimum grade of C in the second composition course and the writing intensive (W) course in the major in order to graduate.

Students earning a Bachelor of Arts degree must also complete the following foreign language requirement: Proficiency established at the fourth-semester level through one of the following:

1. Successful completion of the 202 or 212 course at Old Dominion University (or equivalent at another institution). American Sign Language is accepted to meet this requirement in all Bachelor of Arts programs in the college except Asian Studies, foreign languages and international studies.
2. Exemption through fourth semester granted for acceptable scores on achievement tests.
3. Advanced placement with up to nine hours credit at the 300 level for acceptable scores on the advanced placement test taken at the conclusion of advanced placement courses in high school.
4. Students whose native language is not English are exempt from taking a foreign language for General Education. Students pursuing degrees that require proficiency beyond the 100 level must be certified by the Foreign Languages and Literatures Department to obtain a waiver of the 200-400 level courses.

Students who have taken three or more years of a foreign language in high school but have not been granted advanced placement as explained in item c above must take the College Entrance Examination Board (CEEB) achievement test before continuing in the same language at Old Dominion University. An achievement test score of under 481 normally requires that such students begin with the 121F course in Spanish or the 102F course in other foreign languages.

Additional major requirements are listed under the various departments. The requirements for the Bachelor of Fine Arts and Bachelor of Music degrees are listed under art and music respectively. The requirements for the Bachelor of Science degree with a major in communication, criminal justice, geography, political science, sociology, interdisciplinary studies and women's studies will be found under political science and geography, sociology and criminal justice, communication and theatre arts, interdisciplinary studies, and women's studies.

Students wishing to take a major or minor in the College of Arts and Letters must register with the appropriate department. The College of Arts and Letters allows a maximum of six hours of activity credit. Activity credit beyond the established maximum may be given in unusual circumstances only and will require the approval of the dean of the College of Arts and Letters. Activity credit required by a student's major department will not be counted against the credit limitation.

## Center for Family Violence Education and Research

The Old Dominion University Center for Family Violence Education and Research (CFAVER) is an interdisciplinary group of professionals with a common interest in empowering communities with education and information concerning family violence. The center's aim is to educate

and promote an understanding of the various forms of family violence, including child abuse, sibling abuse, partner abuse, and elder abuse. Strategies to increase awareness about these problems include conducting interdisciplinary research focusing on different types of family violence, developing public awareness campaigns to educate members of the public about family violence, evaluating programs and processes used with family violence victims and offenders, and building relationships with various agencies responsible for family violence case care.

## Institute for the Advancement of Community Justice

The Institute for the Advancement of Community Justice brings together an interdisciplinary group of scholars from the University who are interested in community justice issues. The mission of the Institute is to create and sponsor activities and research that promote well-being and quality of life in the community. This is done through the examination of social problems and their contributors and consequences. Issues of interest include: public safety and criminal justice, mental illness, substance use and abuse, education, health care, and economic disadvantage. The Institute's goals are to facilitate discussion and interdisciplinary research among scholars, community leaders, and local agencies, to ensure that the research accurately addresses issues that are important and relevant to the community, and to share knowledge on community justice issues with local agencies, community leaders, and citizens.

## Institute for Ethics and Public Affairs

The Institute for Ethics and Public Affairs seeks to raise awareness and stimulate discussion of the ethical dimension of matters of public concern within the campus community and the larger Hampton Roads community; to strengthen moral community and foster a commitment to ethical ideals in public life; to facilitate reflection on the ethical standards that govern the professions; and to highlight the unique and valuable contribution that philosophical reasoning can make to practical decision making.

## Institute for the Study of Race and Ethnicity (ISRE)

The Institute for the Study of Race and Ethnicity (ISRE) seeks to develop, promote and implement academic, research and public service programs that focus on the study of race and ethnicity in Hampton Roads, Virginia, the nation, and throughout the African Diaspora. The political, social, economic, cultural and historical experiences of African Americans and other communities of color are important dimensions emphasized in the work of the institute. As such, the institute seeks to establish itself as a major archive and research center in the southeast United States focusing on the experiences of African Americans.

The institute promotes high quality teaching and rigorous policy-oriented research emphasizing interdisciplinary and multidisciplinary approaches, as well as the methods of the traditional social sciences and humanities disciplines. New and improved facilities such as a mini-archive, library, reading and meeting areas and a research/resource center for faculty and students are available.

## Minor in American Studies

American studies offers a unique opportunity to explore the culture and society of the United States from a perspective that is inherently interdisciplinary. A minor in American studies provides a structured program to encourage students to cross traditional academic boundaries and to integrate the arts, humanities, and social sciences.

The minor in American studies is an effective program complement for those majoring in the related fields of art, music, dance and theatre; communication, English, and foreign languages; history, geography, and political science; philosophy; sociology, and criminal justice; as well as interdisciplinary majors in women's studies, African American and African studies, and international studies. The minor is also effective for international students, who may wish either to better understand American culture or to acquire an expertise useful in their home countries.

All students minoring in American studies must take AMST 300, crosslisted as ENGL 396 Topics in English and HIST 396 Topics in History (Topics: The American Dream), and 12 hours of designated courses divided into two fields (the arts and the humanities, and the social sciences), for a total of 15 hours. Please note that some courses listed below require prerequisites. Students may not use more than one course from the minor to satisfy program requirements in another major or minor.

Designated course listings for the minor in American studies are as follows:

AMST 300	Perspectives in American Studies	3
Select at least one course in the arts or the humanities from the following: *		
ARTH 325	American Art Before 1865	
ARTH 326	American Art Since 1865	
ENGL 340	American Drama	
ENGL 342	Southern Literature	
ENGL 345	American Literature to 1860	
ENGL 346	American Literature Since 1860	
ENGL 446	Studies in American Drama	
ENGL 447	The American Novel to 1920	
ENGL 448	The American Novel 1920 to Present	
ENGL 465W	African American Literature	
ENGL 466W	Asian American Literature	
MUSC 460	History of Jazz	
THEA 441	American Theatre	
Select at least one course in the social sciences from the following: *		
COMM 340	Media and Popular Culture	
COMM 434	African-American Rhetoric Voices of Liberation	
COMM 473	Television and Society	
COMM 479W	American Film History	
COMM 481	The Documentary Tradition	
GEOG 350	Geography of the United States and Canada	
HIST 345	Native American History	
HIST 346	Colonial and Revolutionary America	
HIST 348	The Early Republic, 1787-1850	
HIST 351	The Civil War and Reconstruction	
HIST 353	Robber Barons, Reformers, and Radicals: The US Gilded Age and Progressive Era	
HIST 355	The United States, 1945-1991	
HIST 357	The United States in the 1960s	
HIST 361	African-American History to 1865	
HIST 362	African-American History Since 1865	
HIST 363	Women in U.S. History	
POLS 312	American Political Thought	
POLS 407	American Presidency	
POLS 408	American Constitutional Law and Politics I	
POLS 409	American Constitutional Law and Politics II	
POLS 410	African American Politics	
POLS 412	Politics of the Civil Rights Movement	
POLS 415	Women and Politics in America	
SOC 320	Social Inequality	
SOC 340	Sociology of Women	
WMST 302W	Dimensions of Diversity: Intersectionality Among Women	

\* No more than two from any single department.

The director of American studies can approve other courses not listed above to fulfill the minor, including 400-level topics courses, provided

they substantively address some aspect of the creation or perpetuation of an American identity.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

For further information, contact the director of the American studies minor program, Dr. Joseph Cosco, at 683-5473.

## Minors in Chinese Studies, European Studies, Japanese Studies, Latin American Studies, and World Cultures: Values and Visions

See the Minors section of the Department of Foreign Languages and Literatures (p. 119).

## Minor in Middle Eastern Studies

The minor in Middle Eastern studies focuses upon the study of several aspects of Middle Eastern culture, language, politics, geography, and history. The minor consists of 15 hours of course work. Students can elect Track I which would include as a prerequisite three hours of 202-level Arabic, French, Hebrew, Farsi or any other language used in research in the region; this course is not included in the grade point average for the minor. Languages such as Armenian and Turkish could meet this requirement upon the taking of a proficiency examination. Students can also choose Track II, which is a non-language option.

All students must take one core course from the following: GEOG 455 The Middle East or POLS 466 Politics of the Middle East.

The remaining nine hours for Track I or 12 hours for Track II can be taken from the following list of courses:

COMM 337	Model League of Arab States	3
COMM/MIDE 405	Communication and Culture in the Middle East	3
HIST 379	The Ottoman Empire	3
HIST 380	Women and Gender in the Middle East	3
HIST 411	Muslims, Christians, and Jews in the Ottoman Empire	3
HIST 412	From Empire to Nation: Nation-Building in the Balkans and the Middle East	3
MIDE 395	Topics in Middle Eastern Studies	3
MIDE 495	Topics in Middle Eastern Studies	3
SOC 353	Sociology of the Middle East	3
ARAB 311	Advanced Arabic Language and Culture I	3
ARAB 312	Advanced Arabic Language and Culture II	3
ARAB 395	Topics in Arabic	1-6
REL 311	Hebrew Bible/Old Testament	3
REL 312	New Testament	3
REL 350	Judaism	3
REL 351	Christianity	3
REL 352	Islam	3
HIST 396	Topics in History	1-3

Courses not taken to satisfy the core requirement, topics courses offered in addition to the courses listed above, which focus upon the Middle East, and credit earned by studying abroad in the Middle East may also be included in the minor requirements. An internship taken in the Middle East or related to organizations that focus on the Middle East may also count within the minor.

For completion of the minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and

complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University. For further information, contact the director of the Middle Eastern Studies minor at 683-3835 or at fhassenc@odu.edu.

## Minor in Film and Video Studies

A minor in film and video studies consists of 15 hours of course work taken from a minimum of two academic fields. Courses taken for the minor cannot be used to fulfill other degree requirements. The requirements are as follows.

1. COMM 270A / THEA 270A is a prerequisite for the minor and is not included in the calculation of the grade point average for the minor.
2. One internationally-oriented course from the following:

COMM 471W	International Film History	3
ENGL 425	World Film Directors in Context	3
WMST 495	Topics in Women's Studies	3
FR 469	A History of French Cinema	3
SPAN 469	Hispanic Film	3
GER 445	German Cinema	3
	Or approved topics courses	3
3. Twelve hours chosen from the courses listed above or from:

THEA 346	Screenwriting I	3
or COMM 346	Screenwriting I	
THEA 370	The Video Project	3
or COMM 370	The Video Project	
THEA 380	The Video Documentary I	3
or COMM 380	The Video Documentary I	
COMM 479W	American Film History	3
or THEA 479W	American Film History	
ENGL 312	The Film	3
ENGL 424	Short Works in Narrative Media	3
THEA 480	The Video Documentary II	3
or COMM 480	The Video Documentary II	
COMM 481	The Documentary Tradition	3
	Or approved additional courses	3

For completion of the minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of 100- and 200-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University. For more information, contact the Department of Communication and Theatre Arts at 683-3828.

## Jewish Studies Minor

The minor in Jewish Studies requires that students take REL 350 Judaism as well as a three-hour independent study (JST 497 Research Project in Jewish Studies) supervised by the coordinator of Jewish Studies, plus an additional six hours of approved course work at the 300-level or above, for a total of 12 hours. Students interested in the Jewish Studies minor are encouraged to take HEBR 111F Beginning Hebrew I to fulfill the University foreign language requirement.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor (exclusive of 100- and 200-level courses and prerequisite courses) and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

A list of approved courses is available from the academic director and on the website at <http://www.al.odu.edu/ijiu/courses.shtml>.

## The Institute for Jewish Studies and Interfaith Understanding

The Institute for Jewish Studies and Interfaith Understanding (IJIU) is dedicated to the idea that interfaith understanding involves both an appreciation of Judaism's historic role in the development of western civilization and an understanding of the cross-cultural development of the world's religions. IJIU sponsors programs and activities about religious and ethnic diversity worldwide in support of the University's commitment to open dialogue and to inspire a greater understanding of the issues and challenges that confront us at the dawn of the new century. Truly a collaboration of the University and the community, the institute seeks partners and sponsors to offer a wide array of courses to complement the Jewish studies minor and the religious studies minor and to sponsor cultural programs offered at Old Dominion University.

The IJIU is housed in the College of Arts and Letters. The office is located in the Cooper Room, BAL 2024, in the Batten Arts and Letters Building.

## Institute of Asian Studies

Old Dominion University seeks to promote an expanded awareness and understanding of the nations and cultures of Asia, to support and encourage research on Asia, and to make resources available to foster better understanding and more effective interaction between organizations and individuals in the Hampton Roads area and those in Asia. To achieve these goals, the Institute of Asian Studies coordinates special programs and administers a major and minor in Asian studies. It also facilitates cooperative relationships with higher education institutions and other organizations within the United States and throughout Asia. The institute director works closely with the Office of International Programs regarding scholarships and study abroad programs and opportunities.

## Accelerated B.A. or B.S./M.B.A. Program

The accelerated B.A./M.B.A. or B.S./M.B.A. program is designed for well qualified non-business undergraduate ODU students to start their M.B.A. program prior to completing their undergraduate degree. Qualified non-business undergraduate students will be able to start taking M.B.A.-level courses as early as the second semester of their junior year. This will enable them to complete their undergraduate and M.B.A. degrees in approximately five-and-a-half years. Students interested in pursuing the accelerated program should carefully plan their undergraduate course of study considering the requirements of the program, as explained below.

## Admission Requirements

A potential candidate will have:

1. Achieved a minimum Graduate Management Admission Test (GMAT) score of 550
2. Completed all lower level general education requirements
3. Completed at least 24 credit hours at ODU with a GPA of at least 3.0
4. A minimum index of 1200 (index is computed as 200 times the ODU GPA plus GMAT score)

## Admissions Procedure

Students interested in the accelerated program should plan to take the GMAT at least two semesters prior to the semester in which they plan to enroll. Applications should be submitted to the M.B.A. Program Office at the beginning of one full semester (fall, spring) prior to planned enrollment.

Students interested in the program should discuss their plans with the M.B.A. program manager as early as possible. The M.B.A. program manager will act as their advisor. The M.B.A. Program Office is located in 1026 Constant Hall. The phone number is 683-3585.

## M.B.A Core Courses

Admitted students may begin to complete courses from the M.B.A. pre-core and core starting in the second semester of their junior year. The credit hours will count toward the undergraduate degree and will meet upper-level

General Education requirements. Students must maintain a 3.0 grade point average in these courses to continue in the program.

### MBA Pre-Core

MBA 600	Introduction to Statistics	1
MBA 601	Introduction to Managerial Economics	1
MBA 602	Introduction to Finance	1
MBA 603	Introduction to Accounting	1
MBA 604	Introduction to Information Management	1

### MBA Core

ACCT 611	Financial Accounting	2
ECON 607	Managerial Economics	2
FIN 613	Financial Management	2
IT 614	Information and Knowledge Management	2
MGMT 612	Organizational Behavior	2
MKTG 608	Fundamentals of Contemporary Marketing	2
OPMT 615	Operations & Supply Chain Management	2

## Requirements for the M.B.A.

The entire program for a general M.B.A. is 45 credit hours for non-business majors. All courses will be available online and on main campus except for the pre-core, which is only offered online.

Students have to satisfactorily complete:

1. The five hour pre-core
2. Undergraduate requirements and the 16 M.B.A. core courses (32 credit hours). The 16 M.B.A. core courses includes the seven M.B.A. core courses that meet upper-division General Education requirements in the undergraduate degree and the following nine M.B.A. core courses:

### MBA Core

ACCT 609	Managerial Accounting	2
BNAL 606	Statistics for Managers	2
BNAL 610	Fundamentals of Business Analytics	2
ECON 618	Global Macroeconomics	2
FIN 616	Investments and Portfolio Management	2
FIN 619	Business Law and Ethics	2
INBU 620	International Business Issues	2
MGMT 605	Essentials of Leadership	2
MKTG 617	Marketing Strategy	2
Total Hours		18

3. MGMT 621
4. Minimum of four hours of electives. Students may complete this requirement with any combination of 1, 2 or 3 credit hour classes to meet the minimum four- credit requirement. Students may choose to add an additional credential with a choice of a Graduate Certificate or related business degrees. Much of the coursework from the additional credentials can meet the elective requirements of the M.B.A. program as well as the program requirements of the selected certificate or degree program.

## Career Advantage Program

The Career Advantage Program (CAP), administered by the Career Management Center (CMC) in partnership with the academic colleges, is the Arts and Letters students' link to career assistance, resources, and experience.

CAP also encompasses a series of career-related events and services designed to include a practical work experience (Guaranteed Practicum) that is the foundation of CAP, an opportunity for students to gain major-related work experience through internships, cooperative education or class related practical experience in or out of the classroom involving real-world, hands-on projects. Classes meeting the specifications for the guaranteed practical

experience are noted in the Courses of Instruction section of this catalog as "(Qualifies as a CAP Experience)."

For more information, students should visit the CMC Arts and Letters website (<http://www.odu.edu/ao/cmc/al/>) or contact the CMC Liaison or Co-op and Internship Coordinator in BAL 2021.

## Career Management Center

Residing within the College of Arts and Letters, is a full-time, full-service Career Management Center (CMC) with staff dedicated to working with Arts and Letters students and alumni. The Arts and Letters CMC staff is available to offer a full array of career assistance, resources, and experience through the Career Advantage Program (CAP) to connect students with resources that will aid in identifying, researching and exploring possible careers and opportunities to link academic and career interests.

The CMC staff serves as a primary outreach to employers and provides coordination of employer recruitment activities for the college. The staff also provides coordination and assistance in conducting college specific seminars and events such as the Communications Alumni Panel, the Sociology and Criminal Justice Career Fair, Graduate School preparation programs, and employer panels focused on issues relevant to students in the College of Arts and Letters.

## African American and African Studies

Melvina Sumter, Program Director

The African American and African Studies (AAST) program offers the Bachelor of Arts and Bachelor of Science degrees. The program is designed to give students an essential core of basic knowledge and analytical skills, while providing an opportunity to specialize in one of two emphasis areas: African American Studies or African Studies. The African American and African Studies major requires a total of 36 credit hours in African American and African Studies courses, including 18 credit hours of core coursework, 15 hours of coursework evenly distributed between selected upper-division social science and humanities courses, and a minimum of six credit hours of upper-division coursework in African Studies. African American and African Studies majors are required also to take HIST 105H (Africa in a World Setting).

Students can earn either the B.A. or B.S. degree. The B.A. program requires a foreign language through the intermediate level (202). Students seeking the B.S. degree must demonstrate beginning language proficiency (102). Consistent with Old Dominion University's Career Advantage Program (CAP), students majoring in African American and African Studies are required to participate in an appropriate field internship.

## Bachelor of Science and Bachelor of Arts – African American and African Studies Major

### Lower Division General Education Requirements

Written Communication *	6
ENGL 110C English Composition	
ENGL 211C English Composition	
or ENGL 221C Introduction to Writing in Business, Education and Social Sciences	
Oral Communication	3
Mathematics	3
STAT 130M Elementary Statistics (required)	
Language and Culture **	0-12
Information Literacy and Research ***	0-3
Human Creativity	3
Interpreting the Past (met in the major with HIST 105H)	
Literature	3

Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology	3
Human Behavior ****	3
Total Hours	35-50

\* Grade of C or better required

\*\* B.S. students' competence must be at the 102 level. B.A. students must have competence through the 202 level and competence is not met by the associate degree.

\*\*\* Can be met in the major by POLS 308 Research Design

\*\*\*\* AAST 100S may not be used to satisfy this requirement

The requirements for African American and African Studies majors are outlined below. With the permission of the program director, courses not listed below may be approved as substitutions to fulfill program requirements.

### Core Requirements (B.A. and B.S.)

HIST 105H	Interpreting the African Past	3
AAST 100S	Introduction to African American Studies	3
AAST 410	Africana Intellectual Thought and Economic Development	3
AAST 420W	African American Political and Social Thought *	3
AAST 320	Introduction to Research Methods	3
or		
POLS 308	Research Design	
or		
SOC 337	Introduction to Social Research	
AAST 490	Senior Seminar	3
Total Hours		18

\* Grade of C or better required

### Upper-Division Electives (B.A. and B.S., 15 credit hours, 300 and 400 level courses)

Students majoring in African American and African Studies must earn a minimum of 15 credit hours in upper-division humanities and social science courses related to African American studies. Six credit hours of 300/400 level courses must be from the social sciences and six credit hours from the humanities. The remaining three hours must be taken in either the humanities or social sciences depending upon whether the student is enrolled in the B.A. (humanities) or B.S. (social sciences) program. Courses may be selected from among those listed by category below. *No more than two courses from any one discipline may be taken in any category.* With the permission of the program director, courses not listed below may be approved as substitutions to fulfill program requirements.

### Upper-Division Social Science Courses

AAST 305	Africa in Transition	3
AAST 310	Human Rights and Social Change in Africa	3
AAST 395	Topics in African American Studies	3
AAST 396	Topics in African American Studies	3
CRJS 450	Blacks, Crime and Justice	3
CRJS 452	Diversity in Criminal Justice Organizations	3
or SOC 452	Diversity in Criminal Justice Organizations	
GEOG 452	Africa	3
POLS 309	Race, Culture and Public Policy	3
POLS 316	Politics of Africa	3
POLS 410	African American Politics	3
POLS 412	Politics of the Civil Rights Movement	3
PSYC 460	Psychology of African Americans	3

POLS 470	African Americans and Foreign Affairs	3
SOC 323	Sociology of Minority Families	3
SOC 426	The Sociology of Minority Groups	3
SOC 444	Community Justice	3
or CRJS 444	Community Justice	
AAST 368	Internship	3

### Upper-Division Humanities Courses

AAST 395	Topics in African American Studies	3
AAST 396	Topics in African American Studies	3
COMM 434	African-American Rhetoric Voices of Liberation	3
DANC 391	African-American Perspectives in Dance	3
ENGL 465W	African American Literature	3
HIST 361	African-American History to 1865	3
HIST 362	African-American History Since 1865	3
HIST 455	African-American Historiography	3
MUSC 460	History of Jazz	3
HIST 475	History of Modern Africa	3
WMST 302W	Dimensions of Diversity: Intersectionality Among Women	3
AAST 368	Internship	3

### African Studies (B.A. and B.S., 6 credit hours, 300 and 400 level electives)

In addition, students majoring in African American and African Studies must earn six credit hours in African Studies courses. Students may select courses from the following list (or topics courses as approved by the director):

AAST 305	Africa in Transition	3
AAST 310	Human Rights and Social Change in Africa	3
POLS 316	Politics of Africa	3
HIST 475	History of Modern Africa	3

Courses taken in this category cannot duplicate upper-division social sciences and humanities courses taken to fulfill program requirements. At the discretion of the program director, substitutions may be approved to satisfy this requirement. The course options in this category will be expanded and/or modified as they become available.

### Electives

Elective courses may be taken for the remainder of the minimum 120 credits required for the degree.

### Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major
- Option B. Interdisciplinary Minor; 12 hours specified by the department, three of which can be in the major
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Arts and Humanities Component within the College of Arts and Letters that are not required by the major (6 hours). AAST courses and any course listed as an elective choice for the major cannot be used to meet this option.

Graduation requirements include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or ENGL 221C or ENGL 231C, and the writing

intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## African American and African Studies as a Second Major

Students who find themselves especially interested in African American and African Studies but who already have a major may fulfill their upper-division general education requirements by selecting African American and African Studies as a second major. Such students must complete the same departmental requirements as those majoring solely in African American and African Studies, but may count up to five African American and African Studies cross-listed courses taken for their other major toward their African American and African Studies major as well. For instance, a student majoring in both sociology and African American and African Studies may apply five courses, such as SOC 337, and SOC 436 toward the foundation courses, and SOC 323, SOC 426, SOC 444, taken toward their sociology requirements, as three electives for their major in African American and African Studies.

## Minor in African-American Studies

The minor in African American Studies is administered by the Institute for the Study of Race and Ethnicity. Students who wish to qualify for the program must submit a minor declaration form to the African American Studies program.

A variety of courses are offered to meet the requirements of the minor. Interdisciplinary in nature, the African American Studies minor provides an opportunity for students to investigate the history and culture of people of African descent as well as the current political, social, and economic interaction among all members of society.

The minor in African American Studies is a 15 credit hour program, which includes the following:

AAST 100S	Introduction to African American Studies	3
A minimum of six hours of 300/400 level humanities courses from among the following:		6
DANC 391	African-American Perspectives in Dance	
ENGL 465W	African American Literature	
HIST 361	African-American History to 1865	
HIST 362	African-American History Since 1865	
HIST 455	African-American Historiography	
HIST 475	History of Modern Africa	
MUSC 460	History of Jazz	
WMST 302W	Dimensions of Diversity: Intersectionality Among Women	

A minimum of six hours of 300/400 level social science courses from among the following:

AAST 305	Africa in Transition	
AAST 310	Human Rights and Social Change in Africa	
AAST 395	Topics in African American Studies	
AAST 396	Topics in African American Studies	
AAST 410	Africana Intellectual Thought and Economic Development	
AAST 420W	African American Political and Social Thought	
AAST 490	Senior Seminar	
COMM 434	African-American Rhetoric Voices of Liberation	
CRJS 444	Community Justice	
or SOC 444	Community Justice	
CRJS 452	Diversity in Criminal Justice Organizations	
or SOC 452	Diversity in Criminal Justice Organizations	
CRJS 450	Blacks, Crime and Justice	
POLS 309	Race, Culture and Public Policy	

POLS 316	Politics of Africa
POLS 410	African American Politics
POLS 412	Politics of the Civil Rights Movement
PSYC 460	Psychology of African Americans
SOC 323	Sociology of Minority Families
SOC 426	The Sociology of Minority Groups
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Total Hours	15

\* Prerequisite course; does not count toward the grade point average required for the minor

With the approval of the director, courses that focus on the African American experience can also fulfill the requirements of the minor.

No course taken to satisfy the requirement of the minor can be from a student's major field.

Students must maintain a 2.00 cumulative grade point average in the courses required for the minor exclusive of 100- and 200-level courses and prerequisite courses. A minimum of six hours in upper-level courses in the minor must be courses offered by Old Dominion University.

Students must file a minor declaration form in the ISRE Resource Center in BAL 2023.

## Art

Dianne de Beixedon, Chair  
Elliott Jones, Chief Departmental Advisor (ejones@odu.edu)  
Office Telephone: (757) 683-4047

## Bachelor of Arts–Art History Major

Anne Muraoka, Program Director

### Lower Division General Education

Written Communication Skills *	
ENGL 110C	English Composition 3
Select one of the following courses: 3	
ENGL 211C	English Composition
ENGL 221C	Introduction to Writing in Business, Education and Social Sciences
or	
ENGL 231C	Introduction to Technical Writing
Oral Communication Skills	3
Mathematical Skills	3
Language and Culture **	0-12
Information Literacy and Research ***	
Human Creativity ****	3
Select one of the following courses:	
COMM/THEA 270A	Film Appreciation
DANC 185A	Dance and Its Audience
MUSC 264A	Music in History and Culture
THEA 241A	The Theatre Experience
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
The Impact of Technology *****	0-3
Human Behavior	3
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Total Hours	35-50

\* Grade of C or better required in both courses and in ENGL 110C before declaring major in Art History.

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- \*\* Proficiency through 202 level in French, German, Italian, Latin or Spanish; note that proficiency is not met by completion of an associate degree.
- \*\*\* Satisfied in the major by ARTH 211 and ARTH 212.
- \*\*\*\* Neither ARTH 121A nor ARTS 122A may be used to satisfy this requirement.
- \*\*\*\*\* May be fulfilled in the major with ARTH 435W.

## Major Courses

ARTH 211	Ancient and Medieval Art	3
ARTH 212	Renaissance and Modern Art	3
ARTH 351W	Research Methods in Art History (C or better required)	3
ARTH 360	Asian Art (or an ARTH Topics course in a non-Western subject area)	3
ARTH Electives		24
Select eight ARTH 300/400 level courses		
ARTS electives		6
Select two courses in studio art		
<hr/>		
Total Hours		42

Students pursuing graduate work leading to teaching, museology, art criticism or dealing in works of art will be counseled on course selection. - For students considering graduate work in art history, 18 hours of German or French are strongly recommended. Students who wish to distinguish themselves in the major may opt for the thesis elective, ARTH 480, in their final year of study.

## Electives

Elective courses may be taken for the remainder of the minimum 120 credits required for the degree.

## Upper Division General Education

- Option A. Approved Minor, 12-24 credit hours; also second degree or second major
- Option B. Interdisciplinary Minor; 12 credit hours, (3 credit hours may be in the major area of study)
- Option C. International business and regional courses or an approved certification program, such as teaching licensure (hours vary)
- Option D. Two Upper-Division Courses (6 credit hours) from outside the College of Arts and Letters or from the Social Science Component within the College of Arts and Letters that are not required by the major.

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, no less than a grade of C in major courses, a minimum of 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Minor in Art History

A student who chooses to complete a minor in art history must receive the approval of the chief departmental advisor and the art history program director. ARTH 211 and ARTH 212 are prerequisite courses for the minor and are not included in the calculation of the grade point average for the minor. A reading knowledge of French, German, Italian or Spanish is strongly advised. The requirement for the minor for BA and BS students comprises 12 hours selected from ARTH 300- and 400-level courses. BFA students must complete the following:

Select one of the following courses: 3	
ARTH 320W	History of Design
ARTH 350W	Art Criticism
ARTH 351W	Research Methods in Art History



ARTH 300- and 400-level courses	12
Total Hours	15

For completion of the minor a student must have a minimum overall cumulative grade point average of 2.00 and no grade lower than a C in all courses required for the minor exclusive of prerequisite courses. Transfer students must complete a minimum of six hours in ARTH 300- and 400-level courses through courses offered by Old Dominion University.

## Interdisciplinary Minor - The Designed World

Ken Daley, Department of Art, Coordinator

This interdisciplinary minor explores the interwoven historical, cultural, aesthetic, perceptual, and technical domains of the designed world. That virtually all aspects of the human-built world are designed is a generally accepted belief; however, it is not given the careful scrutiny it deserves. Creative planning and critical analysis of design dynamics are emphasized within the context of these course offerings.

The designed world interdisciplinary minor requires 12 credit hours of 300/400-level courses selected from at least two different disciplines with a maximum of six credits from any one discipline. For completion of the interdisciplinary minor, students must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses. At least six hours of 300/400 upper-level courses must be taken through courses offered by Old Dominion University. Three credit hours may be in the major, if a major course is listed as an option for the interdisciplinary minor. As such, it will be credited toward both the major and the interdisciplinary minor.

Course options are as follows:

ARTH 320W	History of Design	3
ARTH 435W	Modern Architecture	3
ARTH 439	Art Between the Wars: 1919-1939	3
ENGL 371W	Communication Across Cultures	3
ENGL 382	Reporting News for Television and Digital Media	3
ENGL 477	Language, Gender and Power	3
GEOG 310	Geography of the City	3
GEOG 412	Cities of the World	3
PSYC 344	Human Factors	3
PSYC 413	Sensation and Perception	3
SEPS 303	Social Aspects of Clothing	3
SEPS 422	Fashion Product Development	3
SEPS 423	Visual Merchandising and Display	3
STEM 382	Industrial Design	3
STEM 386	Architecture	3
STEM 417	Exploring Technology and Modern Industry	3

## Bachelor of Arts–Art Education

Kenneth Fitzgerald, Art Education Program Coordinator (kfitzger@odu.edu)

### Admission

All students must apply for and be admitted into the approved art education program. Students must meet the required criteria for admission by passing the Virginia Board of Education prescribed assessments and earn the minimum required grade point averages (GPA). Application forms for admission to teacher education programs are available at the Office of Teacher Education Services and are to be submitted to the art education program director or Art Department chair before being submitted to Teacher Education Services.

### Prescribed Virginia Board of Education Assessment for Admission to an Approved Teacher Education Program

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program. This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

1. Passing PRAXIS I composite score of 532 by December 31, 2013; **or**
2. Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014:  
Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; **or**
3. Approved substitute test scores:
  - a. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  - b. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
  - c. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
  - d. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
  - e. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
  - f. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
  - g. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
  - h. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
  - i. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**
  - j. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.

*Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

### Required grade point averages (GPA):

- A cumulative GPA of 2.75 is required.
- A major/content GPA of 2.75 is required – all Art courses must be passed with a grade of C or higher.
- A professional education GPA of 2.75 is required – all professional education courses must be passed with a grade of C- or higher.

Although students may enroll in a limited number of education courses, students must be admitted into the approved art education program prior to enrolling in any instructional strategies practicum education course. Students must also meet with an education advisor in the Office of Teacher Education Services.

### Continuance

Students must maintain a cumulative GPA of 2.75, a major/content GPA of 2.75 and a professional education GPA of 2.75. Art courses must be passed with a grade of C or higher. The professional education core must be completed with a grade of C- or higher for continuance. A professional education GPA of 2.75 is required for continuance. Students must take and pass the Virginia Communication and Literacy Assessment (VCLA) and the PRAXIS II Art content knowledge examination prior to or while enrolled in the instructional strategies course. All assessments must be passed prior to the start of the Teacher Candidate Internship Orientation session.

## Virginia Board of Education prescribed assessments:

- Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment.
- PRAXIS II Art: Content Knowledge (test code 0133) – passing score of 159 is required

To review more information on the Virginia Board of Education prescribed assessments, visit the Teacher Education Services website, [www.odu.edu/tes](http://www.odu.edu/tes).

## Graduation

Requirements for graduation include completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, completion of the Senior Assessment; a minimum cumulative 2.75 GPA in the major area and in the professional education core with no grade less than a C in the major/content and with no grade less than a C- in the professional education core; successful completion of the Teacher Candidate Internship; and a minimum of 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University.

Due to changing University requirements, national accreditation standards, and the Virginia Board of Education licensure regulations, the teacher education programs in the College of Arts and Letters are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students are encouraged to obtain current program information from their advisors and from the Teacher Education Services website at [www.odu.edu/tes](http://www.odu.edu/tes).

## Lower Division General Education

Written Communication Skills *		
ENGL 110C	English Composition	3
Select one of the following courses:		3
ENGL 211C	English Composition	
ENGL 221C	Introduction to Writing in Business, Education and Social Sciences	
ENGL 231C	Introduction to Technical Writing	
Oral Communications Skills		3
Mathematical Skills		3
Language and Culture **		0-12
Information Literacy and Research ***		
Human Creativity ****		3
Select one of the following courses:		3
COMM/THEA 270A	Film Appreciation	
DANC 185A	Dance and Its Audience	
MUSC 264A	Music in History and Culture	
THEA 241A	The Theatre Experience	
Interpreting The Past		3
Literature		3
Philosophy and Ethics		3
The Nature and Science		8
Impact of Technology *****		0-3
Human Behavior		3
Total Hours		38-53

\* Grade of C or better required in both courses and in ENGL 110C English Composition before declaring major in Art Education.

\*\* Proficiency through 202 level in French, German, Italian, Latin or Spanish; note that proficiency is not met by completion of an associate degree.

\*\*\* Satisfied in the major by ARTH 211 and ARTH 212.

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\*\*\*\* Neither ARTH 121A nor ARTS 122A may be used to satisfy this requirement.

\*\*\*\*\* May be fulfilled in the major with ARTH 435W.

## Art History Requirements

ARTH 211	Ancient and Medieval Art	3
ARTH 212	Renaissance and Modern Art	3
ARTH 350W	Art Criticism	3
ARTH elective		3
Total Hours		12

## Studio Art Requirements

ARTS 202	Two-Dimensional Design	3
ARTS 203	Three-Dimensional Design	3
ARTS 211	Introduction to Digital Photography	3
ARTS 231	Fundamentals of Drawing	3
ARTS 241	Fundamentals of Painting	3
ARTS 263	Introduction to Ceramics	3
ARTS 279	Fundamentals of Digital Art	3
ARTS 304	Color	3
ARTS 331	Drawing: Composition	3
Select one of the following:		3
ARTS 251	Printmaking: Introduction to Screenprint	
ARTS 252	Printmaking: Introduction to Lithography	
ARTS 253	Alternative Print Techniques	
ARTS 254	Printmaking: The Relief Print	
ARTS 455	Letterpress Printmaking	
Select one of the following:		3
ARTS 261	Introduction to Sculpture	
ARTS 281	Crafts 1: Fibers	
ARTS 291	Crafts 1: Metalsmithing and Jewelry	
ARTS 392	Crafts: Blacksmithing	
Total Hours		33

## Professional Education

ARTS 305	Elementary Art Education Methods and Classroom Management	3
ARTS 406	Secondary Art Education Methods and Classroom Management	3
ARTS 407	Art Education Practicum	2
ARTS 408	Student Teaching Seminar	1
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 408	Reading and Writing in Content Areas <sup>+</sup>	3
TLED 485	Teacher Candidate Internship	12
Total Hours		33

<sup>+</sup> ARTS 279, in addition to TLED 301 and SPED 313, are the prerequisites for TLED 408.

## Upper Division General Education

Satisfied through the professional education sequence.

## Post-Baccalaureate Endorsement Program

Candidates who have previously earned a BFA degree in fine arts may seek licensure only. Information on applying for licensure can be obtained from the Darden College of Education or the art education program director. A

minimum of 36 hours of art and professional courses (including 12 hours of student teaching) from Old Dominion University is required. Before registering for classes candidates must present a portfolio for review by the art education director or the Art Department chief departmental advisor who will determine which transferable courses will meet the cognate program requirements and which art and professional courses must be completed for licensure. A minimum cumulative grade point average of 2.75 is required for continuance and licensure. Those candidates already possessing a B.A. degree in either studio art or art history will meet the qualifications for a second B.A. degree in art education upon completing all additional teaching licensure requirements.

## Bachelor of Arts–Studio Art Major

### Lower Division General Education

Written Communication Skills		
ENGL 110C	English Composition *	3
Select one of the following courses:		
ENGL 211C	English Composition	
ENGL 221C	Introduction to Writing in Business, Education and Social Sciences	
ENGL 231C	Introduction to Technical Writing	
Oral Communication Skills 3		
Mathematical Skills 3		
Language and Culture ** 0-12		
Information Literacy and Research ***		
Human Creativity **** 3		
Select one of the following courses:		
COMM 270A	Film Appreciation	
or THEA 270A	Film Appreciation	
DANC 185A	Dance and Its Audience	
MUSC 264A	Music in History and Culture	
THEA 241A	The Theatre Experience	
Interpreting the Past		3
Literature		3
Philosophy and Ethics		3
The Nature of Science		8
Impact of Technology *****		0-3
Human Behavior		3
Total Hours		35-50

### Major Requirements

#### Art History

ARTH 211	Ancient and Medieval Art	3
ARTH 212	Renaissance and Modern Art	3
ARTH 360	Asian Art	3
Select one of the following: ***** 3		
ARTH 320W	History of Design	
ARTH 350W	Art Criticism	
ARTH 351W	Research Methods in Art History	
ARTH 435W	Modern Architecture	
Total Hours		12

#### Studio Art

ARTS 202	Two-Dimensional Design	3
ARTS 203	Three-Dimensional Design	3
ARTS 211	Introduction to Digital Photography	3
ARTS 231	Fundamentals of Drawing	3
ARTS 241	Fundamentals of Painting	3
Select one of the following: 3		

ARTS 251	Printmaking: Introduction to Screenprint	
ARTS 252	Printmaking: Introduction to Lithography	
ARTS 253	Alternative Print Techniques	
ARTS 254	Printmaking: The Relief Print	
ARTS 455	Letterpress Printmaking	
Select one of the following:		3
ARTS 261	Introduction to Sculpture	
ARTS 263	Introduction to Ceramics	
ARTS 291	Crafts 1: Metalsmithing and Jewelry	
ARTS 392	Crafts: Blacksmithing	
ARTS 279	Fundamentals of Digital Art	3
ARTS 304	Color	3
ARTS 331	Drawing: Composition	3
ARTS 300 or 400-level elective course		3
Total Hours		33

\* Grade of C or better required in both courses and in ENGL 110C before declaring a major in studio art.

\*\* Proficiency through 202 level in French, German, Italian, Latin or Spanish; note that proficiency is not met by completion of an associate degree.

\*\*\* Satisfied in the major by ARTH 211 and ARTH 212.

\*\*\*\* Neither ARTH 121A nor ARTS 122A may be used to satisfy this requirement.

\*\*\*\*\* May be fulfilled in the major with ARTH 435W.

\*\*\*\*\* C or better required.

### Electives

Elective courses may be taken for the remainder of the minimum 120 credits required for the degree.

### Upper Division General Education (minimum 6 credit hours)

- Option A. Approved Minor, 12-24 credit hours; also second degree or second major
- Option B. Interdisciplinary Minor, 12 credit hours (3 credit hours may be in the major area of study)
- Option C. International business and regional courses or an approved certification program, such as teaching licensure (hours vary)
- Option D. Two Upper-Division Courses (6 credit hours) from outside the College of Arts and Letters or from the Social Science Component within the College of Arts and Letters that are not required by the major.

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, no less than a grade of C in major courses, a minimum of 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

### Minor in Studio Arts

A student who chooses to complete a minor in studio arts must receive the approval of the chief departmental advisor. A total of 12 hours in studio art 300- and 400-level courses is required. These courses have prerequisites that must be met by lower-level studio art courses chosen as electives. Normally the total number of prerequisite electives should not exceed nine hours. Students who choose a minor in studio arts should consult with the chief departmental advisor before their sophomore year to determine the specific courses and prerequisites that must be met to complete the minor. There are no specific minors in concentration areas such as painting, photo and print media, and graphic design. However, course selection will be done on an individual basis and may be focused upon a specific area of interest.

For completion of the minor a student must have a minimum overall cumulative grade point average of 2.00 and no grade lower than a C in all courses required for the minor exclusive of prerequisite courses. Transfer students must complete a minimum of six credit hours in ARTS 300- and 400-level courses through courses offered by Old Dominion University.

## Bachelor of Fine Arts

### Admission

Admission to the BFA program is open to all students. Since it is a professional arts program with a continuance portfolio, students are expected to begin their foundation courses in their first year. It is important for students who are considering the BFA as an option to consult with the chief departmental advisor before or during their first semester at Old Dominion University.

### Continuance

Students seeking continuance into the BFA program must first complete at least 15 hours of foundation courses with a minimum grade of C. Students must then submit a portfolio of their work for evaluation by a designated faculty committee and indicate their intended area of concentration.

### Graduation

Requirements for graduation include completion of a minimum of 120-122 credit hours to include a minimum of 30-31 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, completion of the Senior Assessment, and a minimum grade point average of 2.00 with no grade in a major course less than a C.

### Lower Division General Education

Written Communication Skills *		
ENGL 110C	English Composition	3
Select one of the following:		3
ENGL 211C	English Composition	
ENGL 221C	Introduction to Writing in Business, Education and Social Sciences	
ENGL 231C	Introduction to Technical Writing	
Oral Communication Skills		3
Mathematical Skills		3
Language and Culture		0-6
Information Literacy and Research **		
Human Creativity ***		3
Select one of the following:		
COMM/THEA 270A	Film Appreciation	
DANC 185A	Dance and Its Audience	
MUSC 264A	Music in History and Culture	
THEA 241A	The Theatre Experience	
Interpreting the Past		3
Literature		3
Philosophy and Ethics		3
The Nature of Science		8
Impact of Technology ****		0-3
Human Behavior		3
Total Hours		35-44

### Major Requirements

#### Art History

ARTH 211	Ancient and Medieval Art	3
ARTH 212	Renaissance and Modern Art	3
Select one of the following: *****		3

ARTH 320W	History of Design	
ARTH 350W	Art Criticism	
ARTH 351W	Research Methods in Art History	
ARTH 435W	Modern Architecture	
Two 300/400-level Art History (ARTH) courses		6
Total Hours		15

### Foundation Requirements

ARTS 202	Two-Dimensional Design	3
ARTS 203	Three-Dimensional Design	3
ARTS 231	Fundamentals of Drawing	3
ARTS 279	Fundamentals of Digital Art	3
ARTS 304	Color	3
Total Hours		15

### Studio Core

ARTS 211	Introduction to Digital Photography	3
ARTS 241	Fundamentals of Painting	3
Select one of the following:		3
ARTS 251	Printmaking: Introduction to Screenprint	
ARTS 252	Printmaking: Introduction to Lithography	
ARTS 253	Alternative Print Techniques	
ARTS 254	Printmaking: The Relief Print	
ARTS 455	Letterpress Printmaking	
ARTS 261	Introduction to Sculpture	3
or ARTS 263	Introduction to Ceramics	
Select one of the following:		3
ARTS 281	Crafts 1: Fibers	
ARTS 291	Crafts 1: Metalsmithing and Jewelry	
ARTS 392	Crafts: Blacksmithing	
ARTS 331	Drawing: Composition	3
Two 300 or 400-level ARTS courses		6
<b>Capstone Course</b>		3
ARTS 400 for concentrations in drawing and design, fibers, three dimensional design, painting, print and photo media		
ARTS 401 for graphic design concentration majors only		
Total Hours		27

\* Grade of C or better required in both courses and in ENGL 110C before declaring a major in fine arts.

\*\* Satisfied in the major by ARTH 211 and ARTH 212.

\*\*\* Neither ARTH 121A nor ARTS 122A may be used to satisfy this requirement.

\*\*\*\* Can be fulfilled in the major with ARTH 435W.

\*\*\*\*\* C or better required

### Studio Concentrations

All BFA students must choose one of the following after completion of the 15 hours of foundation courses.

#### Drawing and Design

ARTS 271	Introduction to Graphic Design	3
ARTS 350	Advanced Printmaking	3
ARTS 431	Drawing Studio	3
ARTS 432	Figure Drawing Anatomy	3
Select two of the following:		6
ARTS 302	Design Application	
ARTS 341	Painting: Composition	
ARTS 370	Basic Typography	
ARTS 371	Design Concepts	

ARTS 376	Typographic Design	
ARTS 395	Topics in Studio Art *	
ARTS 433	Figure Drawing/ Composition	
ARTS 450	Printmaking Studio	
ARTS 455	Letterpress Printmaking	
ARTS 473	The Book	
ARTS 495	Topics in Studio Art *	
ARTS 497	Tutorial Work in Special Studio Topics *	
Total Hours		18

\* With approval.

### Fibers\*

ARTS 381	Crafts II: Fibers	3
ARTS 481	Crafts III: Fibers	3
Select four of the following:		12
ARTS 253	Alternative Print Techniques	
ARTS 254	Printmaking: The Relief Print	
ARTS 311	Photography 2	
ARTS 341	Painting: Composition	
ARTS 350	Advanced Printmaking	
ARTS 363	Intermediate Ceramics	
ARTS 431	Drawing Studio	
ARTS 450	Printmaking Studio	
ARTS 497	Tutorial Work in Special Studio Topics **	
Total Hours		18

\* ARTS 281 and either ARTS 251 or ARTS 252 must be taken from the Studio Core requirements.

\*\* With approval.

### Graphic Design

ARTS 271	Introduction to Graphic Design	3
ARTS 370	Basic Typography *	3
ARTS 371	Design Concepts	3
ARTS 372	Design Systems	3
ARTS 471	Graphic Design Studio	3
Select two of the following:		6
ARTS 471	Graphic Design Studio	
ARTS 473	The Book	
ARTS 475	Editorial Design	
ARTS 495	Topics in Studio Art **	
ARTS 497	Tutorial Work in Special Studio Topics **	
ARTS 498	Tutorial Work in Special Studio Topics **	
Total Hours		21

\* After completion of ARTS 370, application through portfolio review must be submitted to the department to continue in the graphic design concentration. Applicants for the portfolio review should check the Art Department website or blog regarding the portfolio submission and the review process. In addition, students who are applying for the graphic design concentration must purchase a Macintosh laptop computer and current design software. Specifications for the laptop and software can be obtained from the full-time graphic design faculty or the chief departmental advisor in the Art Department.

\*\* With approval.

Continuance in the graphic design concentration requires a grade of C or better in all prerequisite courses and requirements in the graphic design sequence.

Note that graphic design concentration students take only six credit hours of studio core elective courses.

### Three Dimensional Media

ARTS 361	Advanced Sculpture	3
ARTS 363	Intermediate Ceramics	3
ARTS 391	Crafts II: Metalsmithing and Jewelry	3
Select one of the following:		3
ARTS 461	Sculpture Studio	
ARTS 463	Advanced Ceramics	
ARTS 491	Crafts III: Metalsmithing and Jewelry	
Select two of the following:		6
ARTS 302	Design Application	
ARTS 363	Intermediate Ceramics	
ARTS 392	Crafts: Blacksmithing	
ARTS 461	Sculpture Studio	
ARTS 463	Advanced Ceramics	
ARTS 469	Assemblage	
ARTS 491	Crafts III: Metalsmithing and Jewelry	
ARTS 495	Topics in Studio Art *	
ARTS 497	Tutorial Work in Special Studio Topics *	
Total Hours		18

\* With approval.

### Painting

ARTS 341	Painting: Composition	3
ARTS 441	Advanced Painting: Special Problems	3
ARTS 442	Painting Studio	3
ARTS 469	Assemblage	3
Select two of the following:		6
ARTS 431	Drawing Studio	
ARTS 432	Figure Drawing Anatomy	
ARTS 433	Figure Drawing/ Composition	
ARTS 495	Topics in Studio Art *	
or		
ARTS 497	Tutorial Work in Special Studio Topics *	
Total Hours		18

\* With approval.

### Print and Photo Media

ARTS 251	Printmaking: Introduction to Screenprint	3
or ARTS 252	Printmaking: Introduction to Lithography	
ARTS 311	Photography 2	3
Select four of the following:		12
ARTS 251	Printmaking: Introduction to Screenprint	
ARTS 252	Printmaking: Introduction to Lithography	
ARTS 253	Alternative Print Techniques	
ARTS 254	Printmaking: The Relief Print	
ARTS 350	Advanced Printmaking	
ARTS 411	Photography 3	
ARTS 412	Photo Seminar 1	
ARTS 413	Photo Seminar 2	
ARTS 450	Printmaking Studio	
ARTS 455	Letterpress Printmaking	
ARTS 473	The Book	
ARTS 495	Topics in Studio Art *	
ARTS 497	Tutorial Work in Special Studio Topics *	

\* With approval.

## Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major
- Option B. Interdisciplinary Minor, 12 hours (3 credit hours may be in the major area of study)
- Option C. International business and regional courses or an approved certification program, such as teaching licensure (hours vary)
- Option D. Two Upper-Division Courses (6 hours) from outside the College of Arts and Letters or from the Social Science Component within the College of Arts and Letters that are not required by the major.

A student may take a double concentration, but no more than two courses may be used for both concentrations. Note that a second concentration is not a minor and does not fulfill the upper-division general requirements.

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, no less than a grade of C in major courses, a minimum of 120-122 credit hours, which must include both a minimum of 30-31 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## BFA with Teaching Licensure

### Admission

All students must apply for and be admitted into the approved BFA with teaching licensure program. Students must meet the required criteria for admission by passing the Virginia Board of Education prescribed assessments and earn the minimum required grade point averages (GPA).

### Prescribed Virginia Board of Education Assessment for Admission to an Approved Teacher Education Program

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program. This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

1. Passing PRAXIS I composite score of 532 by December 31, 2013; **or**
2. Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014:  
Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; **or**
3. Approved substitute test scores:
  - a. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  - b. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
  - c. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
  - d. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
  - e. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
  - f. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
  - g. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**

- h. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
  - i. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**
  - j. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.
- Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

### Required grade point averages (GPA):

- A cumulative GPA of 2.75 is required.
- A major/content GPA of 2.75 is required – all Art courses must be passed with a grade of C or higher.
- A professional education GPA of 2.75 is required – all professional education courses must be passed with a grade of C- or higher.

Although students may enroll in a limited number of education courses, students must be admitted into the approved BFA with teaching licensure program prior to enrolling in any instructional strategies practicum education course. Students must also meet with an education advisor in the Office of Teacher Education Services.

### Continuance

Students must maintain a cumulative GPA of 2.75, a major/content GPA of 2.75 and a professional education GPA of 2.75. Art courses must be passed with a grade of C or higher. The professional education core must be completed with a grade of C- or higher for continuance. A professional education GPA of 2.75 is required for continuance. Students must take and pass the Virginia Communication and Literacy Assessment (VCLA) and the PRAXIS II Art content knowledge examination prior to or while enrolled in the instructional strategies course. All assessments must be passed prior to the start of the Teacher Candidate Internship Orientation session.

### Virginia Board of Education prescribed assessments:

- Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment.
- PRAXIS II Art: Content Knowledge (test code 0133) – passing score of 159 is required

To review more information on the Virginia Board of Education prescribed assessments, visit the Teacher Education Services website, [www.odu.edu/tes](http://www.odu.edu/tes).

### Graduation

Requirements for graduation include completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better; completion of the Senior Assessment; a minimum cumulative 2.75 GPA in the major area and in the professional education core with no grade less than a C in the major/content and with no grade less than a C- in the professional education core; successful completion of the Teacher Candidate Internship, and a minimum of 143 credit hours, which must include both a minimum of 36 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University.

In addition to the requirements for the B.F.A. degree, students must complete 33 hours of professional education requirements for K-12 licensure. These are ARTS 305, 406, 407, 408; SPED 313, 406; TLED 301, 408 and 485 (student teaching). The professional core is used to satisfy the Upper Division General Education requirement.

Due to changing University requirements, national accreditation standards, and the Virginia Board of Education licensure regulations, the teacher education programs in the College of Arts and Letters are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students are encouraged to obtain

current program information from their advisors and from the Teacher Education Services website at [www.odu.edu/tes](http://www.odu.edu/tes).

## Transfer Requirements

For the B.A. degrees in studio art and art education, students must complete a minimum of 30-31 credit hours at Old Dominion University. These 30-31 credits must include a minimum of 21 studio credit hours that include 12 credit hours at the 300/400 levels. For the B.A. degree in art history, students must complete a minimum of 30 credit hours at Old Dominion University, which must include a minimum of 12 credit hours at the 300/400 levels. Degree-holding students who are only seeking teaching licensure must complete nine hours of 300/400 level studio art or art education courses at Old Dominion University. A minimum of 36 credit hours in studio art (with 12 minimum at the 300/400 levels) from Old Dominion University is required for the BFA. For a minor in either art history or studio arts, transfer students must complete two elective courses in art history at the 300/400 level at Old Dominion University.

Before registering for classes, transfer students who enroll in the BFA or B.A. in studio art programs must submit a portfolio of work for review by the Art Department chief departmental advisor who will determine which transferable courses will meet equivalent requirements in the major.

Transfer students who enroll in the B.A. in art education program must submit a portfolio of work for review by the art education program director who will determine which transferable studio and professional courses will meet equivalent requirements in the major and those that must still be completed for licensure. Appointments for transfer portfolio evaluations must be made prior to registration for classes.

## Asian Studies

### Bachelor of Arts—Asian Studies

Qiu Jin Hailstork, Director

A total of 120 credit hours is required for the Bachelor of Arts (BA) in Asian Studies. The 120 credit hours are divided into two major categories:

1. Requirements for General Education and electives and
2. 33-35 hours at the upper level required for the Asian Studies major

Each of these two categories consists of the courses as follows:

#### Lower Division General Education

Written Communication *	6
Oral Communication	3
Mathematics	3
Language and Culture **	0-12
Information Literacy and Research (can be met in the major by HIST 201 or POLS 308)	0-3
Human Creativity	3
Interpreting the Past	
HIST 101H      Interpreting the Asian Past (required)	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology	3
Human Behavior	3
<b>Total Hours</b>	<b>38-53</b>

\* Grade of C or better required in both courses and in ENGL 110C before declaring major

\*\* CHIN 111F-CHIN 212 or JAPN 111F-JAPN 212 are required; proficiency is not met by completion of an associate degree.

## Major Requirements

### Research Methods

Select one of the following:	3
HIST 201      Introduction to Historical Methods	
POLS 308      Research Design	
SOC 337      Introduction to Social Research	
PSYC 317      Quantitative Methods	
ECON 400      Research Methods in Economics	

### Capstone Seminar in Asian Studies

ASIA 461W      Asian Studies Capstone Seminar *	3
Asian Experience **	3
<b>Total Hours</b>	<b>9</b>

\* Grade of C or better required.

\*\* Study abroad or an approved practicum; consult with the director for arrangements.

### Upper-level Elective Courses (24-26 credit hours at the 300 or 400 Level)

These courses can be elected from the list below. At least one of the elective courses must be selected from the Humanities (i.e., history, literature, religion, philosophy, art, theatre, and music) and one from social sciences/business (e.g., political science, economics, business management, marketing, geography, sociology, communication, and women's studies). Students are strongly encouraged to take courses in more than one region of Asia. Courses are under development in different disciplines, and additional courses with an Asian content may be approved by the program director. No course listed below may be used to fulfill more than one requirement.

#### Art

ARTH 360      Asian Art	3
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#### Asian Studies

ASIA/HIST 332      South Asia Since Independence	3
ASIA/HIST 336      The Emergence of New China	3
ASIA 337/HIST 338      Japan's Era of Transformation	3
ASIA/POLS 338W      Politics of East Asia	3
ASIA/PHIL 353      Asian Religions	3
ASIA/ARTH 360      Asian Art	3
ASIA 395      Topics in Asian Studies	3
ASIA/POLS 435      Chinese Politics	3
ASIA 461W      Asian Studies Capstone Seminar	3
ASIA 495      Topics in Asian Studies	3

#### Business Management and Marketing

MGMT 463      Management Seminar Abroad (Korea, Philippines, China and/or other Asian countries)	3
MKTG 496      Selected Topics in Marketing (Asian content)	3

#### Communication

COMM 300      International Sojourning	3
COMM 400W      Intercultural Communication	3
COMM 407      Communication and Culture in Asia	3
COMM 495/496      Topics in Communication (Asian content)	1-3

#### Economics

ECON 450      International Economics	3
ECON 454W      Economic Development	3
ECON 495      Selected Topics in Economics (Asian content)	1-3

#### English

ENGL 396      Topics in English (Contemporary Filipino/Filipino-American Literature)	1-3
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ENGL 495	Topics in English (Techno-Orientalism in Science Fiction Film & Literature)	1-3
<b>Filipino American Studies</b>		
FAST 395	Topics in Filipino American Studies	3
<b>Foreign Languages</b>		
CHIN 395	Topics in Chinese	1-3
CHIN 311	Advanced Chinese Language and Culture I	3
CHIN 312	Advanced Chinese Language and Culture II	3
JAPN 311	Advanced Japanese Language and Culture I	3
JAPN 312	Advanced Japanese Language and Culture II	3
JAPN 396	Topics in Japanese	1-3
FLET 310	Japan: A Cultural Odyssey (Culture class in English)	3
<b>Geography</b>		
GEOG 453	Asia	3
GEOG 456	Geography of Southeast Asia	3
GEOG 495/496	Topics in Geography (Asian content)	1-4
<b>History</b>		
HIST 331	Colonialism and Nationalism in Southeast Asia	3
HIST/ASIA 332	South Asia Since Independence	3
HIST/ASIA 336	The Emergence of New China	3
HIST 338/ASIA 337	Japan's Era of Transformation	3
HIST 396	Topics in History	1-3
HIST 439	Politics and Society in East Asia Since 1945	3
HIST 495	Topics in History	1-3
<b>International Business</b>		
INBU 433	Doing Business in Asia	3
INBU 463	International Business Seminar Abroad	3
<b>Philosophy and Religious Studies</b>		
REL 352	Islam	3
PHIL/ASIA 353	Asian Religions	3
PHIL 354	Comparative Philosophy East and West - Personhood	3
PHIL 480	Hinduism	3
PHIL 481	Buddhism	3
PHIL 482	Chinese Religion and Philosophy	3
PHIL 485	Japanese Religion and Philosophy	3
PHIL 495/496	Topics in Philosophy (Asian content)	1-3
<b>Political Science</b>		
POLS 336	South Asia Since Independence	3
POLS/ASIA 338W	Politics of East Asia	3
POLS/ASIA 435	Chinese Politics	3
POLS 436	Japanese Politics	3
POLS 437	International Relations in East Asia	3
POLS 495/496	Topics in Political Science (Asian content)	1-3
<b>Psychology</b>		
PSYC 420	Cross-Cultural Psychology	3
<b>Sociology</b>		
SOC 306	Religion and Society	3
SOC 395	Topics in Sociology (Asian content)	3
<b>Women's Studies</b>		
WMST 401W	Women: A Global Perspective	3
WMST 495	Topics in Women's Studies (Asian content)	3

## Electives

Elective courses may be taken for the remainder of the minimum 120 credits required for the degree.

## Upper-Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Arts and Humanities Component within the College of Arts and Letters that are not required by the major (6 hours). ASIA courses and any course listed as an elective choice for the major cannot be used to meet this option.

Requirements for Graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or ENGL 221C or ENGL 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Minor in Asian Studies

Students who wish to qualify for the minor in Asian studies must file a program declaration with the director of the Institute of Asian Studies and complete a total of 12 credit hours at the 300-400 level. No more than two courses may be taken from any one discipline. For completion of the minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of 100- and 200-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

The courses listed below can be used to fulfill the requirements of the Asian Studies minor. Additional courses with an Asian content may be approved by the program director.

### Asian Studies:

ASIA 332	South Asia Since Independence	3
ASIA 336	The Emergence of New China	3
ASIA 337	Japan's Era of Transformation	3
ASIA 338W	Politics of East Asia	3
ASIA 353	Asian Religions	3
ASIA 360	Asian Art	3
ASIA 395	Topics in Asian Studies *	3
ASIA 435	Chinese Politics	3
ASIA 461W	Asian Studies Capstone Seminar	3
ASIA 495	Topics in Asian Studies *	3

### Business Management and Marketing:

MGMT 463	Management Seminar Abroad	3
MKTG 496	Selected Topics in Marketing *	3

### Communication:

COMM 300	International Sojourning	3
COMM 400W	Intercultural Communication	3
COMM 407	Communication and Culture in Asia	3
COMM 495/496	Topics in Communication *	1-3

### Economics:

ECON 450	International Economics	3
ECON 454W	Economic Development	3
ECON 495	Selected Topics in Economics *	1-3

### English:

ENGL 395	Topics in English *	1-3
ENGL 396	Topics in English *	1-3
ENGL 495	Topics in English *	1-3



<b>Filipino-American Studies:</b>		
FAST 395	Topics in Filipino American Studies	3
<b>Foreign Languages:</b>		
CHIN 311	Advanced Chinese Language and Culture I	3
CHIN 312	Advanced Chinese Language and Culture II	3
CHIN 395	Topics in Chinese	1-3
JAPN 311	Advanced Japanese Language and Culture I	3
JAPN 312	Advanced Japanese Language and Culture II	3
JAPN 396	Topics in Japanese	1-3
JAPN 495	Topics in Japanese	1-3
FLET 310	Japan: A Cultural Odyssey	3
<b>Geography:</b>		
GEOG 453	Asia	3
GEOG 456	Geography of Southeast Asia	3
GEOG 495/496	Topics in Geography *	1-4
<b>History:</b>		
HIST 332	South Asia Since Independence	3
HIST 336	The Emergence of New China	3
HIST 338	Japan's Era of Transformation	3
HIST 439	Politics and Society in East Asia Since 1945	3
HIST 396	Topics in History *	1-3
HIST 495	Topics in History *	1-3
<b>International Business:</b>		
INBU 433	Doing Business in Asia	3
INBU 463	International Business Seminar Abroad	3
<b>Philosophy and Religious Studies:</b>		
PHIL 353	Asian Religions	3
PHIL 354	Comparative Philosophy East and West - Personhood	3
PHIL 480	Hinduism	3
PHIL 481	Buddhism	3
PHIL 482	Chinese Religion and Philosophy	3
PHIL 485	Japanese Religion and Philosophy	3
PHIL 495/496	Topics in Philosophy *	1-3
REL 352	Islam	3
<b>Political Science:</b>		
POLS 338W	Politics of East Asia	3
POLS 435	Chinese Politics	3
POLS 436	Japanese Politics	3
POLS 437	International Relations in East Asia	3
POLS 495/496	Topics in Political Science *	1-3
<b>Psychology:</b>		
PSYC 420	Cross-Cultural Psychology	3
PSYC 495	Topics in Psychology *	1-3
<b>Sociology:</b>		
SOC 306	Religion and Society	3
SOC 395	Topics in Sociology *	3
SOC 396	Topics in Sociology *	3
<b>Women's Studies:</b>		
WMST 401W	Women: A Global Perspective	3
WMST 495	Topics in Women's Studies *	3
WMST 496	Topics in Women's Studies *	3

\* With significant portion of the course about Asia, to be approved by the director.

## Minor in Chinese Studies

The Chinese Studies minor consists of 12 credit hours of 300- and 400-level courses that combine the study of language and culture. For a more complete description and requirements, please refer to the minors section in the Department of Foreign Languages and Literatures (p. 119).

## Minor in Japanese Studies

The Japanese Studies minor consists of 12 credit hours of 300- and 400-level courses that combine the study of language and culture. For a more complete description and requirements, please refer to the minors section in the Department of Foreign Languages and Literatures (p. 119).

## Communication and Theatre Arts

Stephen Pullen, Chair

The Department of Communication and Theatre Arts offers two Bachelor of Arts majors, one in communication with concentration areas in life span communication: relationships and groups; intercultural/international communication; public relations, advocacy, and persuasion; media studies; film studies; and communication foundations and one in theatre/dance with concentration areas in either theatre, theatre-digital film making, theatre-performance, theatre-design technology, theatre education, dance or dance education. A Bachelor of Science in communication is offered with concentration areas in life span communication: relationships and groups, intercultural/international communication; public relations, advocacy, and persuasion; media studies; film studies; and communication foundations as well as a concentration in professional communication (also available via distance learning). Minors are offered in communication, theatre/dance with a theatre specialization, and theatre/dance with a dance specialization. Students must receive a grade of C (2.00) or better in all courses that count toward these majors and minors. All majors must fulfill the requirements of the College of Arts and Letters.

## Bachelor of Arts or Bachelor of Science— Communication Major

Carla Harrell, Chief Departmental Advisor for Communication

### Lower Division General Education

Written Communication *	6
ENGL 110C English Composition & ENGL 211C and English Composition (must pass with C or better)	
Oral Communication	3
COMM 101R Public Speaking **	
Mathematics	3
STAT 130M Elementary Statistics (Required for BS)	
Language and Culture ***	0-12
Information Literacy and Research	3
Human Creativity ****	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology *****	0-3
Human Behavior *****	3
<b>Total Hours</b>	<b>38-53</b>

\* Grade of C required in ENGL 110C before declaring major.

\*\* COMM 101R required in the communication core.

\*\*\* Proficiency through 202 level for BA only and not met by associate degree; competence at the 102 level for BS students.

\*\*\*\* COMM 270A/THEA 270A may not be used to satisfy this requirement.

\*\*\*\* Can be met by COMM 372T.

\*\*\*\*\* COMM 200S may not be used to satisfy this requirement.

## Departmental Requirements

Majors must have a C or better in all courses counted toward the major. Majors must also complete at least one writing intensive course in the major from the following courses:

Select one of the following	3
COMM 315W Communication Between the Sexes	
COMM 335W Rhetorical Criticism	
COMM 400W Intercultural Communication	
COMM 412W Interpersonal Communication Theory and Research	
COMM 447W Electronic Media Law and Policy	
COMM 471W International Film History	
COMM 479W American Film History	
Total Hours	3

## Communication Core—(B.A. 9 hours; B.S. 15 hours – see later section for core requirements in professional communication)

COMM 200S Introduction to Human Communication	3
COMM 260 Understanding Media	3
Total Hours	6

### In addition, B.A. Only:

COMM 301 Critical Methodologies	3
or	
COMM 335W Rhetorical Criticism	
or	
COMM 445 Communication Analysis and Criticism	
Total Hours	3

### In addition, B.S. Only:

COMM 302 Communication Research Methods I	3
Six hours of approved 300/400-level social science courses	6
Total Hours	9

## Additional Communication Hours:

30 hours total for B.A. and 30 hours total for B.S., 24 of which must be at the 300–400 level selected from the following concentration areas and electives. Both the B.A. and B.S. degree seeking student is required to take 10 COMM classes beyond the core course requirements. Eight of those 10 courses (24 hours) must be in the student's selected concentration area (see options below). Two courses (6 hours) may be 100-200 level and/or from any concentration area.

### Concentration Areas (24 hours minimum)

Eight of the ten courses required for the degree must be in a concentration area. Students may apply two 100/200 level courses to those 30 hours and can take two electives from any concentration area.

### Lifespan Communication: Relationships and Groups

Choose eight courses (24 hours): two courses (6 hours) from Foundations and six courses (18 hours) from Applied Theories

<b>Foundations (select two of the following)</b>	6
COMM 314 Nonverbal Communication	
COMM 326 Foundations of Group Communication	
COMM 412W Interpersonal Communication Theory and Research	
<b>Applied Theories (select six of the following)</b>	18

COMM 315W Communication Between the Sexes	
COMM 323 Leadership and Events Management	
COMM 351 Interpersonal Communication in Organizations	
COMM 355 Organizational Communication	
COMM 368 Internship	
COMM 401 Communication Theory	
COMM 421 Communication and Conflict Management	
COMM 423 Nonviolent Communication and Peace	
COMM 425 Family Communication Theory and Research	
COMM 426 Group Communication Theory and Research	
COMM 427 Children's Communication Theory and Research	
COMM 456 Organizations and Social Influence	
Total Hours	24

### Intercultural/International Communication

Choose eight courses (24 hours): two courses (6 hours) from Foundations and six courses (18 hours) from Applied Theories

<b>Foundations (select two of the following)</b>	6
COMM 300 International Sojourning	
COMM 306 Diplomatic Communication	
COMM 314 Nonverbal Communication	
COMM 337 Model League of Arab States	
COMM 400W Intercultural Communication	
COMM 405 Communication and Culture in the Middle East	
COMM 407 Communication and Culture in Asia	
COMM 434 African-American Rhetoric Voices of Liberation	

<b>Applied Theories (select six of the following)</b>	18
COMM 307 Understanding European Film	
COMM 340 Media and Popular Culture	
COMM 366 Public Journalism in the Digital Age	
COMM 368 Internship	
COMM 382 Reporting News for Television and Digital Media	
COMM 443 Hispanic Film	
COMM 444 German Cinema	
or FLET 445 German Cinema	
COMM 447W Electronic Media Law and Policy	
COMM 448 Transnational Media Systems	
COMM 471W International Film History	
COMM 472 New Media Topics: Theories and Practices	
COMM 473 Television and Society	
COMM 481 The Documentary Tradition	
Total Hours	24

### Media Studies

Choose eight courses (24 hours): two courses (6 hours) from Foundations and six courses (18 hours) from Applied Theories

<b>Foundations (select two of the following)</b>	6
COMM 303 Introduction to Public Relations	
COMM 307 Understanding European Film	
COMM 321 Production Management for Television and Stage	
COMM 330 The Short Script	
COMM 340 Media and Popular Culture	
COMM 346 Screenwriting I	
COMM 364 Radio	

COMM 365	Electronic News	
COMM 366	Public Journalism in the Digital Age	
COMM 371	History of Animation	
COMM 372T	Introduction to New Media Technologies	
COMM 382	Reporting News for Television and Digital Media	
<b>Applied Theories (select six of the following)</b>		18
COMM 368	Internship	
COMM 441	The Music Industry and Communication	
COMM 443	Hispanic Film	
COMM 444	German Cinema	
or FLET 445	German Cinema	
COMM 447W	Electronic Media Law and Policy	
COMM 448	Transnational Media Systems	
COMM 455	Critical Analysis of Journalism	
COMM 465	Mass Media and the National Elections	
COMM 467	Media, Politics and Civic Engagement	
COMM 468	Communication and Political Symbolism	
COMM 471W	International Film History	
COMM 472	New Media Topics: Theories and Practices	
COMM 473	Television and Society	
COMM 478	Principles of Media Marketing and Promotion	
COMM 479W	American Film History	
COMM 481	The Documentary Tradition	
COMM 482	Screenwriting II	
COMM 485	Film and Television Genres	
Total Hours		24

### Film Studies

Choose eight courses (24 hours): two courses (6 hours) from Foundations and six courses (18 hours) from Applied Theories

<b>Foundations (select two of the following)</b>		6
COMM 346	Screenwriting I	
COMM 370	The Video Project	
COMM 471W	International Film History	
COMM 479W	American Film History	
<b>Applied Theories (select six of the following)</b>		18
COMM 330	The Short Script	
COMM 368	Internship	
COMM 371	History of Animation	
COMM 380	The Video Documentary I	
COMM 443	Hispanic Film	
COMM 444	German Cinema	
COMM 480	The Video Documentary II	
COMM 481	The Documentary Tradition	
COMM 482	Screenwriting II	
COMM 483	Advanced Video Project	
COMM 485	Film and Television Genres	
Total Hours		24

### Public Relations, Advocacy, and Persuasion

Choose eight courses (24 hours): two courses (6 hours) from Foundations and six courses (18 hours) from Applied Theories

<b>Foundations (select two of the following)</b>		6
COMM 303	Introduction to Public Relations	
COMM 304	Advanced Public Speaking	
COMM 308	Public Relations Writing	
COMM 314	Nonverbal Communication	

COMM 323	Leadership and Events Management	
COMM 326	Foundations of Group Communication	
COMM 333	Persuasion	
COMM 335W	Rhetorical Criticism	
COMM 351	Interpersonal Communication in Organizations	
COMM 355	Organizational Communication	
COMM 364	Radio	
COMM 365	Electronic News	
COMM 366	Public Journalism in the Digital Age	
COMM 382	Reporting News for Television and Digital Media	

<b>Applied Theories (select six of the following)</b>		18
COMM 368	Internship	
COMM 400W	Intercultural Communication	
COMM 403	Public Relations and Crisis Communications	
COMM 412W	Interpersonal Communication Theory and Research	
COMM 421	Communication and Conflict Management	
COMM 426	Group Communication Theory and Research	
COMM 447W	Electronic Media Law and Policy	
COMM 448	Transnational Media Systems	
COMM 455	Critical Analysis of Journalism	
COMM 456	Organizations and Social Influence	
COMM 465	Mass Media and the National Elections	
COMM 467	Media, Politics and Civic Engagement	
COMM 468	Communication and Political Symbolism	
COMM 472	New Media Topics: Theories and Practices	
COMM 473	Television and Society	
COMM 478	Principles of Media Marketing and Promotion	
Total Hours		24

### Communication Foundations

Students will take two courses in each of the five concentration areas. Students cannot major in this concentration without making an application and gaining the approval of a departmental advisor.

### Communication electives (students may choose two courses (6 hours) from options below to apply to their chosen concentration area)

COMM 103R	Voice and Diction	3
COMM 112R	Introduction to Interpersonal Communication	3
COMM 302	Communication Research Methods I	3
COMM 368	Internship	3,6
COMM 369	Research Practicum	3
COMM 401	Communication Theory	3
COMM 469	Communication Education Practicum	3

Please note that COMM 305 will not count in any of the concentration areas in the B.A. or B.S. in communication. This course is a requirement in the professional communication concentration and is only for students in that concentration.

### Internships, Practica, and Special Topics Classes

Students may apply only three credit hours of COMM 368 Internship toward the major in communication. In addition, students may apply only six credits total from the following classes toward the major:

COMM 368	Internship	
COMM 369	Research Practicum	
COMM 469	Communication Education Practicum	

Special Topics in Communication courses and Communication Tutorials courses may be included in a given emphasis when and where appropriate:

COMM 395	Topics in Communication	1-3
COMM 396	Topics in Communication	1-3
COMM 495	Topics in Communication	1-3
COMM 496	Topics in Communication	1-3
COMM 497	Tutorial Work in Special Topics in Communication	1-3

## B.S. in communication with a concentration in professional communication

Fran Hassencahl, Chief Departmental Advisor for Professional Communication Concentration

The professional communication concentration is also available through distance learning. Distant students who have completed a university parallel associate degree can complete two additional years of course work at the University's distance learning sites in order to earn a B.S. Distant students without a university parallel associate degree must complete the lower-division general education requirements.

### Professional Communication Core 12

IDS 300W	Interdisciplinary Theory and Concepts
COMM 302	Communication Research Methods I
COMM 305	Professional Communication
ENGL 327W	Advanced Composition

### Organizational Foundations - select four from the following\* 12

CS 300T	Computers in Society
FIN 331	Legal Environment of Business
MGMT 325	Contemporary Organizations and Management
MGMT 340	Human Resources Management
MGMT 350	Employee Relations Problems and Practices
MGMT 451	Organizational Behavior
MKTG 311	Marketing Principles and Problems
MKTG 402	Consumer Behavior
MKTG 403	Advertising Strategy
MKTG 411	Multi-National Marketing
PHIL 303E	Business Ethics
PSYC 303	Industrial/Organizational Psychology
PSYC 304	Social Psychology
PSYC 343	Personnel Psychology
PSYC 344	Human Factors
PSYC 345	Organizational Psychology
PSYC 408	Theories of Personality

### Additional Hours in Communication - select five from the following 15

COMM 260	Understanding Media
COMM 303	Introduction to Public Relations
COMM 304	Advanced Public Speaking
COMM 314	Nonverbal Communication
COMM 315W	Communication Between the Sexes
COMM 326	Foundations of Group Communication
COMM 333	Persuasion
COMM 351	Interpersonal Communication in Organizations
COMM 355	Organizational Communication
COMM 368	Internship
COMM 372T	Introduction to New Media Technologies
COMM 395	Topics in Communication
COMM 400W	Intercultural Communication

COMM 412W	Interpersonal Communication Theory and Research
COMM 421	Communication and Conflict Management
COMM 447W	Electronic Media Law and Policy
COMM 448	Transnational Media Systems
COMM 456	Organizations and Social Influence
COMM 467	Media, Politics and Civic Engagement
COMM 468	Communication and Political Symbolism
COMM 478	Principles of Media Marketing and Promotion
COMM 481	The Documentary Tradition
COMM 495	Topics in Communication
<b>Additional Hours in English - select two from the following</b>	<b>6</b>
ENGL 307T	Digital Writing
ENGL 334W	Technical Writing
ENGL 325	Introduction to Rhetorical Studies
ENGL 366	Public Journalism in the Digital Age
ENGL 335	Editing and Document Design
ENGL 368	Writing Internship
ENGL 380	Reporting and News Writing I
ENGL 381	Public Relations
ENGL 382	Reporting News for Television and Digital Media
ENGL 395	Topics in English
ENGL 396	Topics in English
ENGL 427W	Writing in the Disciplines
ENGL 435W	Management Writing
ENGL 439	Writing in Digital Spaces
ENGL 468	Advanced Writing Internship
ENGL 477	Language, Gender and Power
ENGL 481	Advanced Public Relations
ENGL 482	Sports Journalism
ENGL 484	Feature Story Writing
ENGL 485W	Editorial and Persuasive Writing
ENGL 486	Media Law and Ethics
ENGL 495	Topics in English
ENGL 496	Topics in English
<b>Total Hours</b>	<b>45</b>

\* Meets the upper-division general education requirement

## Elective Credit

Elective credit will be needed to meet the minimum requirement of 120 credit hours.

## Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Arts and Humanities Component within the College of Arts and Letters that are not required by the major (6 hours).

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing

intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Accelerated B.A./B.S. in Communication and M.A. in Lifespan and Digital Communication

The accelerated bachelor's/master's degree in communication/lifespan and digital communication is administered by the Communication and Theatre Arts Department. The purpose of this accelerated option is to allow exceptional majors in communication to count up to 12 hours of 500-level graduate coursework towards both the B.S. or B.A. in communication and, if accepted, the M.A. in lifespan and digital communication.

## Accelerated B.A./B.S. in Communication and M.A. in Humanities

Please refer to the Humanities section of this Catalog (p. 128) for information on the accelerated program leading to a B.A. or B.S. in communication and an M.A. in humanities.

## Minor in Communication

COMM 101R or COMM 103R and COMM 200S are prerequisite courses for the minor and are not included in the calculation of the GPA for the minor. The requirements for a minor in communication are twelve hours of communication courses at the 300- and 400-level excluding the following courses: COMM 305, COMM 367, COMM 375, and COMM 368 (may only be used once).

For completion of a minor, a student must have a grade of C (2.00) or better in all 300- and 400-level courses taken for the minor. Students must complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Bachelor of Arts–Theatre and Dance Major

Marilyn Marloff, Chief Departmental Advisor for Dance  
 Jenifer Alonzo, Chief Departmental Advisor for Theatre

### Lower Division General Education Credits

Written Communication *	6
Oral Communication **	0-3
Mathematics	3
Language and Culture ***	0-12
Information Literacy and Research	3
Human Creativity ****	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology *****	0-3
Human Behavior *****	3
<b>Total Hours</b>	<b>35-53</b>

- \* Grade of C or better required in both courses and in ENGL 110C before declaring major.
- \*\* Satisfied by THEA 230 for theatre, theatre performance emphasis, theatre design technology emphasis and theatre education majors.
- \*\*\* Proficiency through 202 level; proficiency not met by completion of an associate degree.
- \*\*\*\* Theatre majors may not use THEA 241A or COMM 270A/THEA 270A; dance majors may not use DANC 185A.

- \*\*\*\* Satisfied by TLED 430 for dance education and theatre education majors.
- \*\*\*\*\* COMM 200S preferred.

## Departmental Requirements

(students must select one concentration)

Majors must have a C or better in all courses counted toward the major.

## Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Social Science Component within the College of Arts and Letters that are not required by the major (6 hours).

Theatre and dance majors: Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120-132 credit hours (depending on foreign language proficiency), which must include both a minimum of 25% of the total number of credit hours required for the degree and a minimum of 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Major in Theatre and Dance – Dance Specialization

Marilyn Marloff, Chief Departmental Advisor for Dance

### Dance Concentration

DANC 350	Dance Improvisation	2
DANC 360	Rhythmic Analysis	1
DANC 370	Dance Composition 1	2
DANC 389W	Dance History from 1900 until the Present	3
DANC 393	Anatomy and Kinesiology for Dance	3
DANC 470	Dance Composition 2	2
DANC 489	Principles of Teaching Dance	2
Select 12 credits from the following:		12
DANC 201	Ballet Technique 1	
DANC 302	Ballet Technique 2	
DANC 303	Ballet Technique 3	
DANC 404	Ballet Technique 4	
DANC 405	Ballet Technique 5	
DANC 406	Ballet Technique 6	
Select 12 credits from the following:		12
DANC 211	Modern Dance Technique 1	
DANC 312	Modern Dance Technique 2	
DANC 313	Modern Dance Technique 3	
DANC 414	Modern Dance Technique 4	
DANC 415	Modern Dance Technique 5	
DANC 416	Modern Dance Technique 6	
Two credits from ballet, modern, or jazz		2
Select two credits from the following:		2
DANC 387	Dance Repertory and Performance 1	
DANC 388	Dance Repertory and Performance 2	
DANC 488	Advanced Repertory and Performance	

DANC/THEA electives	9
Total Hours	52

Minimum of 26 credits of technique to include 12 credits of ballet, 12 credits of modern dance and 2 credits of additional ballet, modern or jazz.

Minimum of 3 credits of practicum experience to include 2 credits of repertory and performance and 1 credit of senior project.

Minimum of 9 credits of theatre and dance electives.

As a requirement to graduate, dance majors must achieve 400-level proficiency in ballet technique and modern technique. (Specifically, dance majors must achieve a C or better in DANC 404 or higher and DANC 414 or higher.) The continued maintenance of technical proficiency is required.

## Dance Education Concentration

### Admission

All students must apply for and be admitted into the approved dance education program. Students must meet the required criteria for admission by passing the Virginia Board of Education prescribed assessments and earn the minimum required grade point averages (GPA).

### Prescribed Virginia Board of Education Assessment for Admission to an Approved Teacher Education Program

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program. This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

- A passing PRAXIS I composite score of 532 by December 31, 2013; **or**
- Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014:  
Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; **or**
- Approved substitute test scores:
  1. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  2. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
  3. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
  4. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
  5. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
  6. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
  7. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
  8. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
  9. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**
  10. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.

*Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

### Required grade point averages (GPA):

- A cumulative GPA of 2.75 is required.
- A major/content GPA of 2.75 is required – all Dance courses must be passed with a grade of C or higher.
- A professional education GPA of 2.75 is required – all professional education courses must be passed with a grade of C- or higher.

Although students may enroll in a limited number of education courses, students must be admitted into the approved dance education program prior to enrolling in any instructional strategies practicum education course. Students must also meet with an education advisor in the Office of Teacher Education Services.

### Continuance

Students must maintain a cumulative GPA of 2.75, a major/content GPA of 2.75 and a professional education GPA of 2.75. Dance courses must be passed with a grade of C or higher. The professional education core must be completed with a grade of C- or higher for continuance. A professional education GPA of 2.75 is required for continuance. Students must take and pass the Virginia Communication and Literacy Assessment (VCLA). There is not currently a PRAXIS II Dance content knowledge examination. If a Dance PRAXIS II assessment is established prior to the student applying for the teaching license, it will be required. All assessments must be passed prior to the start of the Teacher Candidate Internship Orientation session.

### Virginia Board of Education prescribed assessments:

- Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment.

To review more information on the Virginia Board of Education prescribed assessments, visit the Teacher Education Services website, [www.odu.edu/tes](http://www.odu.edu/tes).

### Graduation

Requirements for graduation include completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better; completion of the Senior Assessment; a minimum cumulative 2.75 GPA in the major area and in the professional education core with no grade less than a C in the major/content and with no grade less than a C- in the professional education core; successful completion of the Teacher Candidate Internship, and a minimum of 120-132 credit hours, which must include both a minimum of 25% of the total number of credit hours required for the degree and a minimum of 12 credit hours of upper-level courses in the major program from Old Dominion University.

Due to changing University requirements, national accreditation standards, and the Virginia Board of Education licensure regulations, the teacher education programs in the College of Arts and Letters are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students are encouraged to obtain current program information from their advisors and from the Teacher Education Services website at [www.odu.edu/tes](http://www.odu.edu/tes).

The curriculum is as follows:

Select 12 credits from the following:	12
DANC 201	Ballet Technique 1
DANC 302	Ballet Technique 2
DANC 303	Ballet Technique 3
DANC 404	Ballet Technique 4
DANC 405	Ballet Technique 5
DANC 406	Ballet Technique 6
Select 10 credits from the following:	10
DANC 211	Modern Dance Technique 1
DANC 312	Modern Dance Technique 2
DANC 313	Modern Dance Technique 3
DANC 414	Modern Dance Technique 4

DANC 415	Modern Dance Technique 5	
DANC 416	Modern Dance Technique 6	
Select one credit from the following:		1
DANC 321	Jazz Dance 1	
DANC 322	Jazz Dance 2	
DANC 423	Jazz Dance 3	
DANC 424	Jazz Dance 4	
DANC 350	Dance Improvisation	2
DANC 360	Rhythmic Analysis	1
DANC 370	Dance Composition 1	2
DANC 389W	Dance History from 1900 until the Present	3
DANC 393	Anatomy and Kinesiology for Dance	3
DANC 490	Pedagogy for Dance Educators	3
Select two credits from the following:		2
DANC 387	Dance Repertory and Performance 1	
DANC 388	Dance Repertory and Performance 2	
DANC 488	Advanced Repertory and Performance	
Select one of the following:		3
THEA 244	Introduction to Production Design	
THEA 248	Introduction to Stage Makeup	
PE 217	Fundamental Movement Skills and Dance (or equivalent)	2
EXSC 240	Prevention and Care of Injuries Related to Physical Activity	3
Total Hours		47

As a requirement to graduate, dance majors must achieve 400-level proficiency in ballet technique and modern technique. (Specifically, dance majors must achieve a C or better in DANC 404 or higher and DANC 414 or higher.) The continued maintenance of technical proficiency is required.

### Professional Education Core

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 430	PK-12 Instructional Technology	3
TLED 485	Teacher Candidate Internship	12
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
Total Hours		29

### Dance Education Post-Baccalaureate Endorsement Program

Candidates who have already earned an undergraduate degree in dance may seek a post-baccalaureate endorsement. Information on applying for this endorsement can be obtained from the Darden College of Education or the dance education program advisor. Students must have completed or must complete equivalencies for all course work required for the theatre and dance major, as well as complete all Professional Education core classes required for undergraduate dance education majors. The dance advisor will determine which transferable courses will meet the cognate program requirements and which dance and professional courses must be completed for the endorsement. All content area courses must be completed with a grade of C or better, and all professional education courses must be completed with a grade of C- or better. A minimum cumulative grade point average of 2.75 overall, in the major and in the professional education core is required for continuance and endorsement. Although students may enroll in a limited number of education courses, passing Praxis I scores or State Board of Education-approved SAT or ACT scores must be on file with the Office of Teacher Education Services prior to enrollment in any education practicum course or courses in developing instructional strategies.

It is recommended that students take the Praxis I exam prior to, or during, enrollment in TLED 301.

### Minor in Theatre and Dance–Dance Specialization

For a minor in theatre arts with a dance specialization, the student must complete 15 DANC hours AND the prerequisite course DANC 185A (which must be completed with a grade of C or better before declaring the minor).

Courses must include:

1. DANC 185A, which is a prerequisite course for the minor and is not included in the calculation of the GPA for the minor.
2. Minimum of 12 hours at the 300 and 400 levels, with prior agreement by the department.
3. Three additional DANC hours at any level; 100/200-level courses selected will not be included in the calculation of the GPA for the minor.

Students must have a grade of C (2.00) or better in all courses taken for the minor, including the prerequisite course DANC 185A, and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

### Major in Theatre and Dance-Theatre Specialization

Jenifer Alonzo, Chief Departmental Advisor for Theatre

Majors must have a grade of C or better in all courses counted toward the major.

#### Theatre Concentration - General

THEA 173+	Theatre Activities	1
THEA 174+	Theatre Activities	1
THEA 152	Acting One	3
THEA 225	Introduction to Production Technology	3
THEA 230	Drama for Production *	3
THEA 244	Introduction to Production Design	3
THEA 343	History of Theatre: Beginnings to the Renaissance	3
THEA 344	History of Theatre: Classic Baroque to the Present	3
THEA 442	Principles of Directing	3
THEA 449W	Script and Performance Analysis	3
THEA Activities **		2
THEA/DANC Electives		19
Total Hours		47

\* Meets oral communication requirement.

\*\* THEA Activities required 2 hours in addition to 173+ and 174+; hours must be earned through off-stage participation.

#### Theatre Concentration – Digital Film Making Emphasis

THEA 225	Introduction to Production Technology	3
THEA 270A	Film Appreciation	3
THEA 271	Introduction to Filmmaking	3
THEA 330	The Short Script	3
THEA 346	Screenwriting I	3
THEA 385	Cinematography	3
THEA 386	Video and Audio Editing	3
THEA 446	Directing for the Camera	3
THEA 486	Advanced Filmmaking	3
THEA 471W	International Film History	3
or THEA 479W	American Film History	

Student must take an additional 3 credit hours of Film History	3
THEA Electives	14
Total Hours	47

If a film studies minor is elected, students may not use the same film courses to fulfill requirements for the major and minor.

## Theatre Concentration – Performance Emphasis

### Admission

The performance emphasis is intended for students who wish to pursue performance as a career. Students will be admitted to the performance concentration through an audition and interview process administered by the faculty each spring. No student is guaranteed admittance or continuance in the performance concentration. Students may decide at any time to return to the general theatre concentration.

### Continuance

Students must pass a proficiency audition administered by the faculty every spring. Students must abide by the theatre student handbook regulations for the performance concentration.

### Requirements

THEA 173+	Theatre Activities	1
THEA 174+	Theatre Activities	1
THEA 152	Acting One	3
THEA 225	Introduction to Production Technology	3
THEA 230	Drama for Production *	3
THEA 252	Acting Two	3
THEA 320	Auditioning Technique	3
THEA 343	History of Theatre: Beginnings to the Renaissance	3
THEA 344	History of Theatre: Classic Baroque to the Present	3
THEA 347	Movement for the Actor	3
THEA 360	Voice for the Stage I	3
THEA 442	Principles of Directing	3
THEA 449W	Script and Performance Analysis	3
THEA Activites **		2
THEA/DANC Electives		10
Total Hours		47

\* Meets oral communication requirement.

\*\* THEA Activities required 2 hours in addition to 173+ and 174+; hours must be earned through on-stage participation.

## Theatre Concentration – Design Technology Emphasis

### Admission

The design technology theatre emphasis is intended for students who wish to pursue theatre design technology as a career. Students will be admitted to the design technology emphasis through a portfolio review and interview process administered by the faculty in the spring. No student is guaranteed admittance or continuance in the design technology concentration. Students may decide at any time to return to the general theatre concentration.

### Continuance

Students must pass a screening portfolio review and interview administered by the faculty every spring. Additionally students must maintain a C average and abide by the theatre student handbook regulations for the design technology concentration.

### Requirements

THEA 173+	Theatre Activities	1
THEA 174+	Theatre Activities	1

THEA 152	Acting One	3
THEA 225	Introduction to Production Technology	3
THEA 230	Drama for Production *	3
THEA 244	Introduction to Production Design	3
THEA 271	Introduction to Filmmaking	3
THEA 343	History of Theatre: Beginnings to the Renaissance	3
THEA 344	History of Theatre: Classic Baroque to the Present	3
THEA 442	Principles of Directing	3
THEA 449W	Script and Performance Analysis	3
THEA Activites **		2
THEA Electives: Nine hours of electives must be selected from following: THEA 246, 248, 273/274, 321, 325, 341, 345, 349, 368, 370, 373/374, 380, 395/396, 441, 445, 447, 473, 495/496, 497, 498.		9
THEA/DANC Electives: An additional seven hours of electives must be selected from the THEA/DANC offerings.		7
Total Hours		47

\* Meets oral communication requirement.

\*\* THEA Activities required 2 hours in addition to 173+ and 174+; hours must be earned through off-stage participation.

## Theatre Education Concentration

All students must apply for and be admitted into the approved teacher education program. Students must meet the required criteria for admission by passing the Virginia Board of Education prescribed assessments and earn the minimum required grade point averages (GPA).

### Prescribed Virginia Board of Education Assessment for Admission to an Approved Teacher Education Program

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program. This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

- A passing PRAXIS I composite score of 532 by December 31, 2013; **or**
- Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014:  
Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; **or**
- Approved substitute test scores:
  1. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  2. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
  3. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
  4. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
  5. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
  6. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
  7. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
  8. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
  9. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**



10. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.

*Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

#### Required grade point averages (GPA):

- A cumulative GPA of 2.75 is required.
- A major/content GPA of 2.75 is required – all Theatre courses must be passed with a grade of C or higher.
- A professional education GPA of 2.75 is required – all professional education courses must be passed with a grade of C- or higher.

Although students may enroll in a limited number of education courses, students must be admitted into the approved theatre education program prior to enrolling in any instructional strategies practicum education course. Students must also meet with an education advisor in the Office of Teacher Education Services.

#### Continuance

Students must maintain a cumulative GPA of 2.75, a major/content GPA of 2.75 and a professional education GPA of 2.75. Theatre courses must be passed with a grade of C or higher. The professional education core must be completed with a grade of C- or higher for continuance. A professional education GPA of 2.75 is required for continuance. Students must take and pass the Virginia Communication and Literacy Assessment (VCLA). There is not currently a PRAXIS II Theatre content knowledge examination. If a Theatre PRAXIS II assessment is established prior to the student applying for the teaching license, it will be required. All assessments must be passed prior to the start of the Teacher Candidate Internship Orientation session.

#### Virginia Board of Education prescribed assessments:

- Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment.

To review more information on the Virginia Board of Education prescribed assessments, visit the Teacher Education Services website, [www.odu.edu/tes](http://www.odu.edu/tes).

#### Graduation

Requirements for graduation include completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better; completion of the Senior Assessment; a minimum cumulative 2.75 GPA in the major area and in the professional education core with no grade less than a C in the major/content and with no grade less than a C- in the professional education core; successful completion of the Teacher Candidate Internship, and a minimum of 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University.

Due to changing University requirements, national accreditation standards, and the Virginia Board of Education licensure regulations, the teacher education programs in the College of Arts and Letters are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students are encouraged to obtain current program information from their advisors and from the Teacher Education Services website at [www.odu.edu/tes](http://www.odu.edu/tes).

#### The curriculum is as follows:

THEA 152	Acting One	3
THEA 225	Introduction to Production Technology	3
THEA 230	Drama for Production *	3
THEA 244	Introduction to Production Design	3
THEA 248	Introduction to Stage Makeup	3

THEA 343	History of Theatre: Beginnings to the Renaissance	3
THEA 344	History of Theatre: Classic Baroque to the Present	3
THEA 442	Principles of Directing	3
THEA 449W	Script and Performance Analysis	3
THEA 489	Methods of Teaching Theatre	3
THEA 490	Theatre Education Practicum	1
THEA Activities **		3
THEA/DANC electives ***		6
Total Hours		40

\* Meets oral communication requirement.

\*\* THEA Activities 3 hours required: 2 hours must be earned through off stage production participation.

\*\*\* THEA/DANC electives: at least three elective hours should be at the 300-400 level and focus on performance or design/theatre technology.

#### Professional Education Core

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 430	PK-12 Instructional Technology *	3
TLED 485	Teacher Candidate Internship **	12
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
Total Hours		29

\* Meets impact of technology requirement.

\*\* Student teaching.

#### Theatre Education Post-Baccalaureate Endorsement Program

Candidates who have already earned an undergraduate degree in theatre may seek licensure only. Information on applying for licensure can be obtained from the Darden College of Education or the theatre education program advisor. Students must have completed or must complete equivalencies for all course work required for the theatre and dance major, as well as complete all Professional Education core classes required for undergraduate theatre education majors. The theatre advisor will determine which transferable courses will meet the cognate program requirements and which theatre and professional courses must be completed for licensure. All content area courses must be completed with a grade of C or better, and all professional education courses must be completed with a grade of C- or better. A minimum cumulative grade point average of 2.75 overall, in the major and in the professional education core is required for continuance and licensure. Although students may enroll in a limited number of education courses, passing Praxis I scores or State Board of Education-approved SAT or ACT scores must be on file with the Office of Teacher Education Services prior to enrollment in any education practicum course or courses in developing instructional strategies. It is recommended that students take the Praxis I exam prior to, or during, enrollment in TLED 301.

#### Minor in Theatre and Dance - Theatre Specialization

For a minor in theatre arts with a theatre specialization, the student must complete 15 THEA hours AND the prerequisite course THEA 225 (which must be completed with a grade of C or better before declaring the minor). Courses must include:

1. THEA 225 is a prerequisite course for the minor and is not included in the calculation of the GPA for the minor.
2. Minimum of 12 hours at the 300 and 400 levels, with prior agreement by the department.
3. Three additional THEA hours at any level; 100/200 level courses selected will not be included in the calculation of the GPA for the minor.
4. At least one credit hour must be obtained by completing a Theatre Activity Credit (TAC).

Students must have a grade of C (2.00) or better in all courses taken for the minor, including the prerequisite course THEA 225, and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## English

Dana Heller, Chair

The Bachelor of Arts in English requires a minimum of 43 hours in English, in addition to English courses taken to satisfy General Education requirements: ENGL 110C, ENGL 211C, and ENGL 112L or ENGL 114L.

Upon completion of ENGL 110C, intended majors should apply to the chief departmental advisor for English to declare the major. Once admitted to the program, students take courses in two areas: the core (foundation courses) and the concentration. The core (22 hours) consists of a broad range of courses in several areas of English. The concentration (15 hours) is one of six areas of concentration (creative writing, journalism, linguistics, literature, professional writing, teaching) within the overall Bachelor of Arts program and allows the student to pursue that area in depth. In addition, students in all concentrations have two free electives (6 hours) in English at the 300 or 400 level. Because requirements sometimes change, students should consult the latest course requirement lists available in the department office. All majors must take an English writing intensive (W) course to graduate. Majors in the literature, creative writing, and linguistics concentrations should consult their English advisor regarding the writing intensive requirement. Students must maintain a grade point average of 2.0 in the major to graduate.

The department offers graduate degrees in applied linguistics, creative writing, and English. Please refer to the Graduate Catalog for more information.

## Bachelor of Arts—English Major

Janis Smith, Chief Departmental Advisor

### Lower Division General Education

Written Communication *	6
Oral Communication	3
Select one of the following:	
COMM 101R Public Speaking	
COMM 103R Voice and Diction	
COMM 112R Introduction to Interpersonal Communication	
Mathematics	3
Language and Culture **	0-12
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology ***	0-3
Human Behavior	3

\* Grade of C or better required in both courses and in ENGL 110C before declaring major.

\*\* BA students must have competence through the 202 level; competence is not met by completion of the associate degree.

\*\*\* Teacher education majors satisfy the requirement with TLED 430.

### Foundation courses

ENGL 200	Introduction to English Studies	1
ENGL 301	Introduction to British Literature I	3
or ENGL 302	Introduction to British Literature II	
Select one of the following:		3
ENGL 340	American Drama	
ENGL 342	Southern Literature	
ENGL 345	American Literature to 1860	
ENGL 346	American Literature Since 1860	
Select one of the following:		3
ENGL 360	World Masterpieces I	
ENGL 363	World Masterpieces II	
ENGL 493	Contemporary World Literature	
Select one of the following:		3
ENGL 303	Shakespeare's Histories and Comedies	
ENGL 304	Shakespeare's Tragedies and Poetry	
Select one of the following: *		3
ENGL 418W	Jewish Writers	
ENGL 459W	New Literatures in English	
ENGL 463W	Women Writers	
ENGL 465W	African American Literature	
ENGL 466W	Asian American Literature	
Select two of the following:		6
ENGL 325	Introduction to Rhetorical Studies	
ENGL 333	Introduction to Critical Theory	
ENGL 370	English Linguistics	
Total Hours		22

\* Grade of C or better required

### Open English Electives

Two ENGL 300- or 400-level courses	6
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### Concentration Courses (15 hours)

Select one of the following options:

#### Creative Writing

ENGL 300	Introduction to Creative Writing	3
Select two of the following:		6
ENGL 449	Craft of Literary Nonfiction	
ENGL 456	The Craft of Fiction	
ENGL 457	The Craft of Poetry	
Select two of the following:		6
ENGL 351	Fiction Workshop	
ENGL 352	Poetry Workshop	
ENGL 451	Advanced Fiction Workshop	
ENGL 452	Advanced Poetry Workshop	
ENGL 454	Creative Nonfiction	
Total Hours		15

Please consult the department advisor about the writing intensive requirement. All majors must take an English writing intensive (W) course to graduate.

#### Journalism

ENGL 380	Reporting and News Writing I	3
ENGL 483W	Reporting and News Writing II	3

ENGL 484	Feature Story Writing	3
ENGL 486	Media Law and Ethics	3
Select one of the following:		3
ENGL 335	Editing and Document Design	
ENGL 366	Public Journalism in the Digital Age	
ENGL 368	Writing Internship	
ENGL 381	Public Relations	
ENGL 382	Reporting News for Television and Digital Media	
ENGL 454	Creative Nonfiction	
ENGL 481	Advanced Public Relations	
ENGL 482	Sports Journalism	
ENGL 485W	Editorial and Persuasive Writing	
Total Hours		15

### Linguistics

ENGL 350	Aspects of the English Language	3
Select three of the following:		9
ENGL 371W	Communication Across Cultures	
ENGL 440	General Linguistics	
ENGL 442	English Grammar	
ENGL 443	Southern and African American English	
ENGL 444	History of the English Language	
ENGL 450	American English	
ENGL 477	Language, Gender and Power	
ENGL 495/496	Topics in English (linguistics-related independent study)	
Select one course from approved electives at the 300 and 400 level, including Anthropology, English (especially rhetoric), Foreign Languages (not FLET), internship		3
Total Hours		15

Note: Linguistics emphasis students must take ENGL 370 in the Analytics portion of the core. All majors must take an English writing intensive (W) course to graduate.

### Literature

ENGL 301	Introduction to British Literature I	3
or ENGL 302	Introduction to British Literature II	
Select one of the following:		3
ENGL 340	American Drama	
ENGL 342	Southern Literature	
ENGL 345	American Literature to 1860	
ENGL 346	American Literature Since 1860	
ENGL 441	American Travel Literature	
Select three courses at the 400 level, at least one of which must be in literature before 1800, and at least one must be in literature after 1800		9
Total Hours		15

### Notes:

- Literature emphasis students must take ENGL 333 in the Analytics portion of the core.
- All majors must take an English writing intensive (W) course to graduate.

Please consult the department advisor about the writing intensive requirement.

### Professional Writing

Select five of the following:		15
ENGL 307T	Digital Writing	

ENGL 325	Introduction to Rhetorical Studies	
ENGL 327W	Advanced Composition	
ENGL 334W	Technical Writing	
ENGL 354	Client-Based Research Writing	
ENGL 368	Writing Internship	
ENGL 381	Public Relations	
ENGL 427W	Writing in the Disciplines	
ENGL 435W	Management Writing	
ENGL 439	Writing in Digital Spaces	
ENGL 468	Advanced Writing Internship	
ENGL 473	Writing with Video	
ENGL 481	Advanced Public Relations	
ENGL 495	Topics in English *	
Total Hours		15

\* When the topic is relevant to professional writing and approved by the chief departmental advisor

All majors must take an English writing intensive (W) course to graduate.

### Elective Credit

Elective credit will be needed to meet the minimum requirement of 120 credit hours.

### Teaching

(See below, Bachelor of Arts—English Major with Teaching Licensure in English)

### Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Social Science Component within the College of Arts and Letters that are not required by the major (6 hours).

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

### Bachelor of Arts—English Major with Teaching Licensure in English

This program leads to eligibility for teacher licensure in Virginia. Licensure in English prepares students for a full range of secondary school teaching assignments. The program is accredited by the State of Virginia; in addition, Virginia has licensure reciprocity agreements with thirty other states, should the student leave Virginia.

The program combines the usual requirements of a college major and minor. Students take courses in the English department (ENGL) of the College of Arts and Letters and Teaching and Learning department of the Darden College of Education. Students receive a Bachelor of Arts in English.

### Admission

All students must apply for and be admitted into the approved English teacher preparation program. Students must meet the required criteria

for admission by passing the Virginia Board of Education prescribed assessments and earn the minimum required grade point averages (GPA).

### Prescribed Virginia Board of Education Assessment for Admission to an Approved Teacher Education Program

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program. This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

1. Passing PRAXIS I composite score of 532 by December 31, 2013; **or**
2. Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014:  
Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; **or**
3. Approved substitute test scores:
  - a. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  - b. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
  - c. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
  - d. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
  - e. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
  - f. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
  - g. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
  - h. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
  - i. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**
  - j. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.

*Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

### Required grade point averages (GPA):

- A cumulative GPA of 2.75 is required.
- A major/content GPA of 2.75 is required – all English courses must be passed with a grade of C- or higher.
- A professional education GPA of 2.75 is required – all professional education courses must be passed with a grade of C- or higher.

Although students may enroll in a limited number of education courses, students must be admitted into the approved English teacher preparation program prior to enrolling in any instructional strategies practicum education course. Students must also meet with an education advisor in the Office of Teacher Education Services.

### Continuance

Students must maintain a cumulative GPA of 2.75, a major/content GPA of 2.75 and a professional education GPA of 2.75. English courses must be passed with a grade of C- or higher. The remaining courses required for the major and in the professional education core must be completed with a grade of C- or higher for continuance. A professional education GPA of 2.75 is required for continuance. Students must take and pass the Virginia

Communication and Literacy Assessment (VCLA) and the PRAXIS II English content knowledge examination prior to or while enrolled in the instructional strategies course. All assessments must be passed prior to the start of the Teacher Candidate Internship Orientation session.

### Virginia Board of Education prescribed assessments:

- Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment.
- PRAXIS II English: Content Knowledge (test code 0041) – passing score of 172 is required

To review more information on the Virginia Board of Education prescribed assessments, visit the Teacher Education Services website, [www.odu.edu/tes](http://www.odu.edu/tes).

### Graduation

Requirements for graduation include completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better; completion of the Senior Assessment; a minimum cumulative 2.75 GPA in the major area and in the professional education core with no grade less than a C- in the major/content and the professional education core; successful completion of the Teacher Candidate Internship, and between 120-132 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University.

Due to changing University requirements, national accreditation standards, and the Virginia Board of Education licensure regulations, the teacher education programs in the College of Arts and Letters are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students are encouraged to obtain current program information from their advisors and from the Teacher Education Services website at [www.odu.edu/tes](http://www.odu.edu/tes).

Course requirements are as follows:

### Lower Division General Education

See list under Bachelor of Arts in English above.

### Foundation courses

ENGL 200	Introduction to English Studies	1
ENGL 301	Introduction to British Literature I	3
or ENGL 302	Introduction to British Literature II	
ENGL 345	American Literature to 1860	3
or ENGL 346	American Literature Since 1860	
Select one of the following:		3
ENGL 360	World Masterpieces I	
ENGL 363	World Masterpieces II	
ENGL 493	Contemporary World Literature	
Select one of the following:		
ENGL 303	Shakespeare's Histories and Comedies	3
or ENGL 304	Shakespeare's Tragedies and Poetry	
Select one of the following: *		3
ENGL 459W	New Literatures in English	
ENGL 463W	Women Writers	
ENGL 465W	African American Literature	
ENGL 466W	Asian American Literature	
Select two of the following:		6
ENGL 325	Introduction to Rhetorical Studies	
ENGL 333	Introduction to Critical Theory	
ENGL 370	English Linguistics	
Total Hours		22

\*Grade of C or better required

Teaching emphasis students must take ENGL 333 in the Analytics portion of the core. All majors must take an English writing intensive (W) course to graduate.

### English Elective course

ENGL 300 or 400-level course	3
<b>Total Hours</b>	<b>3</b>

### Emphasis courses

ENGL 301 or ENGL 302	Introduction to British Literature I Introduction to British Literature II	3
ENGL 345 or ENGL 346	American Literature to 1860 American Literature Since 1860	3
ENGL 327W	Advanced Composition	3
ENGL 350	Aspects of the English Language	3
ENGL 406	The Teaching of Literature	3
ENGL 455	The Teaching of Composition, Grades 6-12	3
<b>Total Hours</b>		<b>18</b>

### Professional Education Courses

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 430	PK-12 Instructional Technology	3
TLED 451	Developing Instructional Strategies for Teaching in the Middle/High School: English	3
TLED 483	Seminar in Teacher Education (corequisite with TLED 451)	1
TLED 485	Teacher Candidate Internship	12
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
<b>Total Hours</b>		<b>33</b>

### Upper Division General Education

Satisfied through professional education sequence.

## Bachelor of Science Degree- Interdisciplinary Studies Major- Professional Writing Concentration

Please refer to the Interdisciplinary Studies section of this Catalog for information on the IDS professional writing program.

### Certificate in Professional Writing

This certificate requires 12 hours of professional writing courses from the following courses:

Select four of the following:		12
ENGL 307T	Digital Writing	
ENGL 325	Introduction to Rhetorical Studies	
ENGL 327W	Advanced Composition	
ENGL 334W	Technical Writing	
ENGL 354	Client-Based Research Writing	
ENGL 368	Writing Internship	
ENGL 381	Public Relations	
ENGL 427W	Writing in the Disciplines	
ENGL 435W	Management Writing	
ENGL 439	Writing in Digital Spaces	
ENGL 468	Advanced Writing Internship	

ENGL 473	Writing with Video
ENGL 481	Advanced Public Relations

Total Hours 12

To apply for the certificate, contact the coordinator of professional writing.

### Minor in English

The English minor consists of 15 hours of 300- and 400-level courses, three hours of which must be at the 400 level. A general minor and five minors in areas of emphasis are offered. Regardless of emphasis, the curriculum is still called a minor in English.

- English:** 15 hours selected from ENGL 300- and 400-level courses.
- Creative Writing:** 15 hours selected from the following: ENGL 300, ENGL 351, ENGL 352, ENGL 449, ENGL 451, ENGL 452, ENGL 454, ENGL 456, ENGL 457.
- Journalism:** 15 hours selected from the following: ENGL 335, ENGL 366, ENGL 368, ENGL 380, ENGL 381, ENGL 382, ENGL 454, ENGL 480, ENGL 481, ENGL 482, ENGL 483W, ENGL 484, ENGL 485W, ENGL 486.
- Linguistics:** 15 hours selected from the following: ENGL 350, ENGL 370, ENGL 371W, ENGL 440, ENGL 442, ENGL 443, ENGL 444, ENGL 450, ENGL 477.
- Literature and Film:** 15 hours selected from the following: ENGL 301, ENGL 302, ENGL 303, ENGL 304, ENGL 312, ENGL 333, ENGL 336, ENGL 340, ENGL 342, ENGL 345, ENGL 346, ENGL 349, ENGL 360, ENGL 363, ENGL 403, ENGL 407, ENGL 416, ENGL 418W, ENGL 421, ENGL 423, ENGL 424, ENGL 425, ENGL 432, ENGL 433, ENGL 438, ENGL 446, ENGL 447, ENGL 448, ENGL 459W, ENGL 460, ENGL 461, ENGL 462, ENGL 463W, ENGL 465W, ENGL 466W, ENGL 492, ENGL 493.
- Professional Writing:** 15 hours selected from the following: ENGL 307T, ENGL 325, ENGL 327W, ENGL 334W, ENGL 354, ENGL 368, ENGL 381, ENGL 427W, ENGL 435W, ENGL 439, ENGL 473, ENGL 481, ENGL 484.

For completion of a minor, a student must have a minimum grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement at Old Dominion University.

### Advising

To declare an English major or minor, students must see the English departmental advisor (CDA). The CDA will assign each major to a faculty advisor. Students in the Secondary Education Endorsement Program will also have an advisor in the Darden College of Education. All English majors are required to have a conference with their advisors before each semester (preferably during preregistration). The CDA will hold periodic group meetings with English majors to keep them fully informed.

### Advanced Placement

Students seeking English credits by examination should confer with the chief departmental advisor.

### Research Practicum

Students who wish to combine research and real-world experience can take Research Practicum. See the description in the Courses of Instruction section for prerequisites.

### Accelerated B.A. and M. A. in English Program

By allowing exceptionally successful students to count up to 12 hours of graduate courses toward both an undergraduate and graduate degree, this

program makes it possible for such students to earn both a B.A. and M.A. in English within five years.

## Admission Requirements

To be admitted to the program, students must have completed at least 60 undergraduate hours, including at least nine hours in English courses at the 300-level or above. At the time of admission, they must have an overall GPA of 3.00 or better, and a GPA of 3.30 or better in all English courses.

## Admission Procedures

Interested students who meet the admission requirements should apply to the graduate program director as soon as possible after completing the required 60 undergraduate hours. In consultation with the graduate program director, students will:

1. Officially declare themselves an undergraduate English major with the English Department's undergraduate chief departmental advisor.
2. Draft a schedule of graduate courses to be taken as an undergraduate, which will be placed in the student's undergraduate and graduate advising files.
3. Apply, during their senior year, to the Office of Graduate Admissions for admission to the M.A. in English program.

Once students have been awarded their B.A. degree and fulfilled all regular admission requirements for the M.A. in English, they will be officially admitted into the M.A. program.

## Program Requirements

Students in the program will fulfill all normal admission and curricular requirements for both a B.A. in English and an M.A. in English, with the following exceptions:

1. Students in the program may count up to 12 hours of graduate courses taken as an undergraduate for which they have earned a grade of B (3.0) or better toward both the B.A. and M.A. in English degrees.
2. Students in the program may substitute English graduate courses for undergraduate courses according to the following schema. All students must complete an undergraduate writing intensive course in the major.
  - a. Any 500-level course that is cross-listed with a 400-level course may be substituted for the 400 level course.
  - b. Students may substitute 600-level courses for undergraduate courses according to the following list:

ENGL 600	Introduction to Research and Criticism	3
for		
ENGL 333	Introduction to Critical Theory	3
ENGL 615	Shakespeare	3
for		
ENGL 303	Shakespeare's Histories and Comedies	3
or ENGL 304	Shakespeare's Tragedies and Poetry	
ENGL 632	18th Century British Literature	3
for		
ENGL 421	British Literature 1660-1800	3
or ENGL 432	Origins and Early Development of the British Novel to 1800	
ENGL 641	19th Century British Literature	3
for		
ENGL 432	Origins and Early Development of the British Novel to 1800	3
or ENGL 433	Victorian Literature	
ENGL 645	20th Century British Literature	3
for		
ENGL 438	The Twentieth-Century British Novel	3
ENGL 655	Topics in World Literature	3

for		
ENGL 493	Contemporary World Literature	3
ENGL 656	American Literature to 1810	3
for		
ENGL 345	American Literature to 1860	3
ENGL 657	American Literature 1810-1870	3
for		
ENGL 447	The American Novel to 1920	3
ENGL 658	American Literature 1870-1946	3
for		
ENGL 346	American Literature Since 1860	3
ENGL 659	American Literature 1945-Present	3
for		
ENGL 349	The Contemporary American Novel	3
ENGL 664	Teaching College Composition	3
for		
ENGL 455	The Teaching of Composition, Grades 6-12	3
ENGL 685	Writing Research	3
or		
ENGL 686	Introduction to Rhetoric and Writing Studies	3
for		
ENGL 427W	Writing in the Disciplines	3
ENGL 686	Introduction to Rhetoric and Writing Studies	3
for		
ENGL 325	Introduction to Rhetorical Studies	3
or ENGL 427W	Writing in the Disciplines	
ENGL 677	Language and Communication Across Cultures	3
for		
ENGL 371W	Communication Across Cultures	3
ENGL 672	Syntax	3
for		
ENGL 350	Aspects of the English Language	3
ENGL 695	Topics	1-3
for 400-level literature elective		
or		
ENGL 495	Topics in English	1-3
ENGL 791	Seminar in Literary Studies	3
for 400-level literature elective		

- c. Students in the program may make a written petition for other substitutions to the graduate program director, who will consider them in consultation with the chief departmental advisor and the instructor(s) of the courses involved.

### NOTES:

1. In accordance with University policy, up to 21 hours of graduate courses taken as an undergraduate may be counted toward the B.A. in English degree. However, only 12 hours of graduate courses taken as an undergraduate may also be counted toward the M.A. degree in English.
2. Like students in the regular M.A. in English program, students in the accelerated B.A./M.A. in English degree may count no more than 12 hours at the 500-level toward their M.A. degree. Students are strongly advised against taking all 12 of those 500-level hours as an undergraduate, since doing so will limit their scheduling flexibility subsequently.
3. Students in this program may earn a B.A. in English and M.A. in English degrees in different emphasis areas. However, in order to

avoid taking a course or courses that fulfill requirements for one degree but not the other, students considering this possibility should consult carefully with the graduate program director. Students should consult the Graduate Catalog for information concerning the M.A. in English.

## Accelerated Master of Arts - Applied Linguistics

By allowing exceptional students to count up to 12 hours of graduate courses toward both an undergraduate and graduate degree, this degree program makes it possible for such students to earn both a B.A. in English with an emphasis in linguistics and an M.A. in applied linguistics within five years.

### Admission Requirements

To be admitted to the program, students must have completed at least 60 undergraduate hours, including at least nine hours in English linguistics courses at the 300 level or above. At the time of admission, they must have an overall GPA of 3.00 or better, and a GPA of 3.30 or better in all English linguistics courses.

### Admission Procedures

Interested students who meet the admission requirements should apply to the graduate program director as soon as possible after completing the required 60 undergraduate hours. In consultation with the graduate program director, students will:

1. Officially declare themselves an undergraduate English major with an emphasis in linguistics to the English Department's undergraduate chief departmental advisor.
2. Draft a schedule of graduate courses to be taken as an undergraduate, which will be placed in the student's undergraduate and graduate advising files.
3. Apply to the Office of Graduate Admissions for admission to the M.A. in applied linguistics program during their senior year.

Students will be admitted to the accelerated program for the semester after they make their application. Once students have been awarded their B.A. degrees and have fulfilled all regular admission requirements for the M.A. in applied linguistics, they will be officially admitted into the M.A. program.

### Program Requirements

Students in the program will fulfill all normal admission and curricular requirements for both a B.A. in English with a linguistics emphasis and an M.A. in applied linguistics, with the following exceptions:

1. Students in the program may count up to 12 hours of graduate courses taken as an undergraduate for which they have earned a grade of B (3.0) or better toward both the B.A. in English and M.A. in applied linguistics degrees.
2. Students in the program may substitute English linguistics graduate courses for undergraduate courses according to the following schema. All students must complete an undergraduate writing intensive course in the major.
  - a. Any 500-level linguistics course that is cross listed with a 400-level course may be substituted for the 400-level course.
  - b. Students may substitute 600-level courses for undergraduate courses according to the following list:

ENGL 672	Syntax	3
for		3
ENGL 350	Aspects of the English Language	3
ENGL 677	Language and Communication Across Cultures	3
for		
ENGL 371W	Communication Across Cultures	3
ENGL 695	Topics	1-3
for		
ENGL 495	Topics in English	1-3

- c. Students in the program may make a written petition for other substitutions to the graduate program director (GPD) for electives in fields such as Asian studies, education, or professional writing. The GPD will consider substitutions in consultation with the chief departmental advisor and the instructor(s) of the courses involved. Students should consult the Graduate Catalog for requirements for the M.A. in Applied Linguistics.

## Foreign Languages and Literatures

[www.al.odu.edu/lang/](http://www.al.odu.edu/lang/)

Angelica Huizar, Chair

Peter Schulman, Chief Departmental Advisor for French

To be Named, Chief Departmental Advisor for German

Andrew Gordus, Chief Departmental Advisor for Spanish

Betty Rose Facer, Director, Language Learning Center

### Foreign language in high school

Students who have studied a foreign language in high school for three or more years must take a placement exam before continuing in the same language. Students with less than three years of foreign language study in high school may take the placement test if they wish to begin higher than 101F; otherwise, they must begin with the 101F course. This policy does not apply to students who have advanced placement credit. Contact the Testing Center for additional information.

**Foreign language courses below the 300 level are not open to native and heritage speakers; these students should consult a foreign language faculty member for advising.**

The **General Education Foreign Language requirement** as well as the foreign language proficiency requirement for the B.A. degree in the College of Arts and Letters (p. 90) may be exempted through acceptable scores in the CEEB Achievement Test in French, German or Spanish or departmentally administered examinations in other languages. Contact the Testing Center for additional information. Credit is granted for scores of 3, 4 and 5 on Advanced Placement (AP) language exams in Chinese, French, German, Italian, Japanese, and Spanish and literature exams in French, Latin and Spanish. No more than nine credits will be awarded if both AP language and literature exams are submitted. Credit is also granted for scores of 4, 5, 6 and 7 on the A2 and B exams in French, German, Latin and Spanish of the International Baccalaureate (IB). Contact the department for additional information.

### REQUIREMENTS FOR UNDERGRADUATE DEGREES

The College of Arts and Letters and the Strome College of Business require foreign language proficiency at the fourth-semester level for students pursuing Bachelor of Arts degrees.

Students whose native language is not English are exempt from taking a foreign language for General Education. Students pursuing degrees that require proficiency beyond the 100 level must be certified by the Foreign Languages and Literatures Department to obtain a waiver of the 200-300 level courses.

To receive the waiver the student would need one of the following: (102 level for BS; 202 level for BA; 311 & 312 level for BAIS).

1. a TOEFL exam at the time of ODU admission;
2. a high school transcript showing that the student's education was primarily in another language;
3. for those languages not commonly taught in the Foreign Languages and Literatures Department, a translation exam evaluated by a faculty member indicating the student would pass the appropriate level.

Special emphasis at all levels of language instruction is placed on oral proficiency through dialogues, oral reports, class discussions and assignments in the Language Learning Center.

**Language Learning Center:** The goal of the Language Learning Center is to serve the needs of faculty, students and the Hampton Roads community in promoting the study of foreign languages offered at Old Dominion

University through the use of technology-enhanced methods and materials. The center has been an integral part of the Foreign Languages and Literatures Department since its inception in 1992. Serving over 1,200 students each semester from the Department of Foreign Languages and Literatures and the English Language Center, the center is committed to instructional technology for foreign language learning and quality instruction.

## Bachelor of Arts–Foreign Languages and Literatures Major

### Lower Division General Education

Written Communication *	6
Oral Communication (Satisfied in the major by one of the following):	
FR 311 Communicative Competence: Speaking and Listening	
GER 311 Communicative Competence: Speaking and Listening	
SPAN 311 Communicative Competence: Speaking and Listening	
Mathematics	3
Language and Culture (Satisfied by the major)	
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	
HIST 102H Interpreting the European Past (required)	3
Literature	
FLET 100L Understanding World Literature (required)	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology **	0-3
Human Behavior	
GEOG 100S Cultural Geography (required)	3
<b>Total Hours</b>	<b>35-38</b>

\* Grade of C or better required in both courses and in ENGL 110C before declaring major.

\*\* Satisfied by TLED 430 for teacher licensure students.

### Core Requirements 6

- Option A: Another foreign language at any level or
- Option B: Area Studies. Consult the department for a list of approved courses each semester.

### Transfer Credits

Students who have received an A.A., A.S. or A.A. and S. from a Virginia community college, Richard Bland College or an equivalent associate degree approved by Transfer Evaluation Services have met all lower-division general education requirements. However, completion of ENGL 211C and either six hours of a second foreign language or six hours of area studies (which may include ) are major requirements and are not automatically met by completion of an associate degree. Transfer students who have taken a different general education course in the same perspective area should consult the chief departmental advisor to determine if substitutions are possible.

All majors must complete the Lower Division General Education requirements and the core requirements and select one of the following concentrations. A cumulative grade point average of 2.00 is required for the 30 hours of upper-division courses in French, German, or Spanish. No more than two FR/GER/SPAN courses taught in English can be counted for the major. At least 12 hours in the concentration must be taken at Old Dominion University.

## Concentration Areas

### FRENCH

FR 311	Communicative Competence: Speaking and Listening *	3
or FR 320	Contemporary France through the Media	
FR 312W	Communicative Competence: Writing and Reading **	3
Select one of the following:		3
FR 331	French Literary Forms: Prose	
FR 332	French Literary Forms: Theatre	
FR 333	French Literary Forms: Poetry	
FR 407	Advanced Grammar and Syntax	3
Two FR 400-level electives		6
Four FR 300 or 400-level electives		12
<b>Total Hours</b>		<b>30</b>

### GERMAN

GER 311	Communicative Competence: Speaking and Listening *	3
GER 312W	Communicative Competence: Writing and Reading **	3
GER 321	German Civilization from the Middle Ages to World War I	3
GER 407	Advanced Grammar and Syntax	3
Six GER 300 or 400-level electives		18
<b>Total Hours</b>		<b>30</b>

### SPANISH

SPAN 311	Communicative Competence: Speaking and Listening *	3
SPAN 312W	Communicative Competence: Reading and Writing **	3
SPAN 320	Spanish Culture and Civilization	3
or SPAN 321	Latin American Culture and Civilization	
Select one of the following:		3
SPAN 331	Introduction to Spanish Literature: Medieval to 1700	
SPAN 332	Introduction to Spanish Literature: 1700 to Present	
SPAN 333	Introduction to Early Latin American Literature	
SPAN 334	Introduction to Modern Latin American Literature	
SPAN 407	Advanced Grammar and Syntax	3
SPAN 410	Spanish Applied Linguistics	3
or SPAN 415	Spanish Phonetics	
Two SPAN 300 or 400-level electives		6
One SPAN 400-level elective		3
SPAN 475W	Spanish Senior Research Seminar	3
<b>Total Hours</b>		<b>30</b>

\* Satisfies oral communication

\*\* Grade of C or better required

### Elective Credit

Elective credit will be needed to meet the minimum requirement of 120 credit hours.



## Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Social Science Component within the College of Arts and Letters that are not required by the major (6 hours).

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Bachelor of Arts with Licensure in Pre-K Through Grade 12

### Admission

All students must apply for and be admitted into the approved foreign language teacher preparation program for French, German or Spanish. Students must meet the required criteria for admission by passing the Virginia Board of Education prescribed assessments and earn the minimum required grade point averages (GPA).

### Prescribed Virginia Board of Education Assessment for Admission to an Approved Teacher Education Program

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program. This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

1. Passing PRAXIS I composite score of 532 by December 31, 2013; **or**
2. Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014:  
Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; **or**
3. Approved substitute test scores:
  - a. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  - b. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
  - c. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
  - d. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
  - e. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
  - f. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
  - g. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
  - h. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
  - i. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**

- j. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.

*Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

### Required grade point averages (GPA):

- A cumulative GPA of 2.75 is required.
- A major/content GPA of 2.75 is required – all French, German or Spanish major courses must be passed with a grade of C or higher.
- A professional education GPA of 2.75 is required – all professional education courses must be passed with a grade of C- or higher.

Although students may enroll in a limited number of education courses, students must be admitted into the approved foreign language teacher preparation program prior to enrolling in any instructional strategies practicum education course. Students must also meet with an education advisor in the Office of Teacher Education Services.

### Continuance

Students must maintain a cumulative GPA of 2.75, a major/content GPA of 2.75 and a professional education GPA of 2.75. French, German or Spanish courses must be passed with a grade of C or higher. The professional education core must be completed with a grade of C- or higher for continuance. A professional education GPA of 2.75 is required for continuance. Students must take and pass the Virginia Communication and Literacy Assessment (VCLA) and the PRAXIS II French, German or Spanish examination and receive an official rating of Advanced-low or higher on the ACTFL OPI prior to or while enrolled in the instructional strategies course. All assessments must be passed prior to the start of the Teacher Candidate Internship Orientation session.

### Virginia Board of Education prescribed assessments:

- Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment.
- PRAXIS II French: Content Knowledge (test code 5174) CBT – passing score of 163 is required
- PRAXIS II German: Content Knowledge (test code 5183) CBT – passing score of 163 is required
- PRAXIS II Spanish: Content Knowledge (test code 5195) CBT – passing score of 168 is required

To review more information on the Virginia Board of Education prescribed assessments, visit the Teacher Education Services website, [www.odu.edu/tes](http://www.odu.edu/tes).

### Graduation

Requirements for graduation include completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better; completion of the Senior Assessment; a minimum cumulative 2.75 GPA in the major area and in the professional education core with no grade less than a C in the major/content and with no grade less than a C- in the professional education core; successful completion of the Teacher Candidate Internship, and a minimum of 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University.

Due to changing University requirements, national accreditation standards, and the Virginia Board of Education licensure regulations, the teacher education programs in the College of Arts and Letters are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students are encouraged to obtain current program information from their advisors and from the Teacher Education Services website at [www.odu.edu/tes](http://www.odu.edu/tes).

Students holding a baccalaureate degree in French, German, or Spanish (or its accepted equivalent) may enroll in the program leading to licensure. Students seeking licensure only must see an advisor before enrolling. A maximum of nine hours in the language, to be selected with the help of the major advisor, may also be required.

Students seeking licensure in pre-K through grade 12 complete the lower-division General Education requirements listed under the Bachelor of Arts-Foreign Languages and Literatures major.

### Concentration in French with Licensure in Pre-K through Grade 12

FR 311	Communicative Competence: Speaking and Listening *	3
FR 312W	Communicative Competence: Writing and Reading	3
FR 320 or FR 420	Contemporary France through the Media Francophone Civilization	3
FR 407	Advanced Grammar and Syntax	3
Six FR 300/400-level electives **		18
<b>Total Hours</b>		<b>30</b>

\* Satisfies oral communication requirement.

\*\* At least three credits must be in literature at the 400 level.

#### Professional Education sequence

FL 452	Methods for Teaching Foreign Languages in Pre-K through Grade 12	3
FL 456	Seminar in Foreign Language Teacher Education	1
TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 430	PK-12 Instructional Technology *	3
TLED 485	Teacher Candidate Internship **	12
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
<b>Total Hours</b>		<b>33</b>

\* Satisfies impact of technology requirement.

\*\* Student teaching.

### Concentration in German with Licensure in Pre-K Through Grade 12

GER 311	Communicative Competence: Speaking and Listening *	3
GER 312W	Communicative Competence: Writing and Reading	3
GER 321	German Civilization from the Middle Ages to World War I	3
GER 407	Advanced Grammar and Syntax	3
Six GER 300/400 level electives **		18
<b>Total Hours</b>		<b>30</b>

\* Satisfies oral communication requirement.

\*\* At least six credits must be on the 400 level and one in literature.

#### Professional Education sequence

TLED 301	Foundations and Introduction to Assessment of Education	3
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TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 430	PK-12 Instructional Technology *	3
TLED 485	Teacher Candidate Internship	12
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
FL 452	Methods for Teaching Foreign Languages in Pre-K through Grade 12	3
FL 456	Seminar in Foreign Language Teacher Education	1

**Total Hours** 33

\* Satisfies impact of technology requirement.

### Concentration in Spanish with Licensure in Pre-K Through Grade 12

SPAN 311	Communicative Competence: Speaking and Listening **	3
SPAN 312W	Communicative Competence: Reading and Writing	3
SPAN 320 or SPAN 321	Spanish Culture and Civilization Latin American Culture and Civilization	3
Select one of the following		3
SPAN 331	Introduction to Spanish Literature: Medieval to 1700	
SPAN 332	Introduction to Spanish Literature: 1700 to Present	
SPAN 333	Introduction to Early Latin American Literature	
SPAN 334	Introduction to Modern Latin American Literature	
SPAN 407	Advanced Grammar and Syntax	3
SPAN 410 or SPAN 415	Spanish Applied Linguistics Spanish Phonetics	3
Two SPAN 300 or 400-level electives		6
One SPAN 400-level elective		3
SPAN 475W	Spanish Senior Research Seminar	3
<b>Total Hours</b>		<b>30</b>

\* Satisfies oral communication requirement.

#### Professional Education sequence

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 430	PK-12 Instructional Technology *	3
TLED 485	Teacher Candidate Internship	12
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
FL 452	Methods for Teaching Foreign Languages in Pre-K through Grade 12	3
FL 456	Seminar in Foreign Language Teacher Education	1
<b>Total Hours</b>		<b>33</b>

\* Satisfies impact of technology requirement.

## Elective Credit

Elective credit will be needed to meet the minimum requirement of 120 credit hours.

## Upper Division General Education

Satisfied by the professional education core.

## Foreign Languages and Literatures Minors

The department offers minors in foreign languages and literatures with a concentration in French, German and Spanish. Students must complete 15 hours of 300/400-level courses in the language and earn a cumulative grade point average of 2.0 in these upper-division courses. Lower-level courses and prerequisite courses do not count toward the grade point average required for the minor. Only one FR/GER/SPAN course taught in English may be applied toward the minor. At least six hours of upper-level courses must be taken through courses offered by Old Dominion University. Contact the department for a list of recommended courses.

## Interdisciplinary Minor

### World Cultures: Values and Visions

**Coordinator: Luis Guadano, lguadano@odu.edu , 683-5741**

The World Cultures: Values and Vision interdisciplinary minor requires 12 credit hours of 300/400-level courses selected from at least two different disciplines with a maximum of six credits from any one discipline. For completion of the interdisciplinary minor, students must have a minimum overall cumulative grade point average of 2.00 in ALL courses required for the minor exclusive of lower-level courses and prerequisite courses. At least six hours of upper-level courses must be taken through courses offered by Old Dominion University. Three credit hours may be in the major, if a major course is listed as an option for the interdisciplinary minor. As such, it will be credited toward both the major and the interdisciplinary minor.

This interdisciplinary minor develops an understanding of human behavior in different cultures. In order to interpret information from other countries and ethnic groups, students need to learn that certain common notions such as perceptions of personhood, the organization of time and space, and the appropriate organization and behavior of social groups vary from country to country. This minor will explore different cultural perspectives and value systems. Students should emerge with a more sophisticated understanding of their own and others' cultures.

Course options are as follows:

ANTR 304	Digging Up the Past	3
ANTR 305	North American Archaeology	3
ANTR 320	The Sexes in Cross-Cultural Perspective	3
COMM 400W	Intercultural Communication	3
COMM 444/ GER 445/FLET 445	German Cinema	3
ENGL 371W	Communication Across Cultures	3
FLET 307	Understanding European Film	3
FLET/JAPN 310	Japan: A Cultural Odyssey	3
FLET/FR/GER 410	Berlin-Paris: Crucibles of European Ideas	3
FLET/SPAN 471	Hispanic Women Authors	3
FLET/GER 476	German-Jewish Literature and Culture	3
FR 320	Contemporary France through the Media	3
FR 438	Studies in Twentieth-Century French Literature	3
FR 469	A History of French Cinema	3
GEOG 451	Europe	3
GEOG 452	Africa	3
GEOG 453	Asia	3
GEOG 455	The Middle East	3

GEOG 456	Geography of Southeast Asia	3
IT 425	Information Systems for International Business	3
MGMT 361	International Business Operations	3
MKTG 411	Multi-National Marketing	3
PHIL 354	Comparative Philosophy East and West - Personhood	3
POLS 325W	World Politics	3
PSYC 420	Cross-Cultural Psychology	3
SPAN 320	Spanish Culture and Civilization	3
SPAN 471	Hispanic Women Authors	3

## European Studies Minor

**Peter Schulman: To be Named, 683-3973**

The turn of the twenty-first century coincides with the first united European currency, the Euro. The Euro is emblematic of a new Europe, one that has become a major force not only in world politics but in the ever-evolving cultural landscape of the new millennium. The study of European cultures provides students with a unique understanding of the complex mosaic that is today's Europe. In the increasingly competitive job market, a focus on European Studies is a valuable asset in any field.

Students who minor in European Studies focus on different aspects of European culture, language, literature, film, politics, geography, philosophy, and history. Students may declare a minor in European Studies upon successful completion of FR 311 and FR 312W or GER 311 and GER 312W or SPAN 311 and SPAN 312W, or the equivalent. The additional 12 credit hours will include electives in the Department of Foreign Languages and Literatures and courses from the following program areas: Art, Geography, History, Music, Philosophy, and Political Science.

### Option 1

- Two courses from Foreign Languages and Literatures, above 312W or the equivalent. One course must be outside the language of proficiency, or can be a FLET course with a European emphasis.
- Two courses from related disciplines outside of the Department of Foreign Languages and Literatures.

### Option 2

- Three courses from Foreign Languages and Literatures, above 312W. One course must be outside the language of proficiency, or can be a FLET course with a European emphasis.
- One course from related disciplines outside of the Foreign Languages and Literatures Department.

Credits can also be earned by studying abroad in Europe. The student's course of study will be determined in consultation with an advisor from the Department of Foreign Languages and Literatures.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Latin American Studies Minor

**Coordinator: Andrew Gordus, agordus@odu.edu, 683-4319**

The requirements for a minor in Latin American Studies are 15 credit hours comprised of the following:

1. Three credit hours to demonstrate Spanish proficiency (Portuguese is also accepted).
2. Twelve credit hours at the 300- or 400-level taken from at least three of the following program areas: Geography, History, International Business, Political Science and Spanish.

Note: Credits may also be earned by studying abroad in Latin America (including Brazil).

The Latin American Studies program at Old Dominion University offers a variety of interdisciplinary courses during the academic year. A minor must represent at least three of the following program areas. These courses include:

#### Geography

GEOG 454W	Latin America	3
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#### History

HIST 371	Modern Mexico	3
HIST 372	Central America and the Caribbean Since 1800	3
HIST 373	U.S.-Latin American Relations	3
HIST 470	Democracy and Development in Modern Latin America	3

#### International Business

INBU 432	Doing Business in Latin America	3
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#### Political Science

POLS 337	Latin American Politics	3
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#### Spanish

SPAN 321	Latin American Culture and Civilization	3
SPAN 333	Introduction to Early Latin American Literature	3
SPAN 334	Introduction to Modern Latin American Literature	3
SPAN 449	Contemporary Spanish-American Drama	3
SPAN 469	Hispanic Film	3
SPAN 471	Hispanic Women Authors	3

Other courses with a Latin American focus may count.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Japanese Studies Minor

**Coordinator: Junji Yoshida**

The Japanese Studies minor consists of 15 credit hours of 300- and 400-level courses that combine the study of language and culture. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

#### Required Courses: 6 credit hours

JAPN 311	Advanced Japanese Language and Culture I *	3
JAPN 312	Advanced Japanese Language and Culture II	3

#### Electives: 9 credit hours

Electives may be selected from any two different subject areas listed below.

ARTH 360	Asian Art	
ASIA 337	Japan's Era of Transformation	
ASIA 338W	Politics of East Asia	
ASIA 353	Asian Religions	
FLET 310	Japan: A Cultural Odyssey	
HPE 497	Topics in Health and Physical Education (Theory of Martial Arts)	
HIST 338	Japan's Era of Transformation	
MGMT 462	Comparative International Management	

MGMT 463	Management Seminar Abroad	
PHIL 353	Asian Religions	
PHIL 485	Japanese Religion and Philosophy	
POLS 338W	Politics of East Asia	
POLS 436	Japanese Politics	
and Topics Courses **		

\* JAPN 212 or equivalent is a prerequisite to JAPN 311

\*\* Topics courses dealing with Japan in any discipline can be applied toward the minor. (Advisor's approval required.)

## Chinese Studies Minor

**Coordinator: Zhongtang Ren, zren@odu.edu, 683-5242**

The Chinese Studies minor consists of 12 credit hours of 300- and 400- level courses that combine the study of language and culture. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

#### Requirements: 12 credit hours

#### Prerequisite Courses: 12 Credits \*

CHIN 111F	Beginning Chinese	6
CHIN 212	Intermediate Chinese	6

\* Prerequisite courses do not count in the 2.00 grade point average required for the minor.

#### Required Courses: 6 credit hours

CHIN 311	Advanced Chinese Language and Culture I	3
CHIN 312	Advanced Chinese Language and Culture II	3

#### Elective Courses: 6 credit hours from any two different subject areas listed below

CHIN 395	Topics in Chinese	
CHIN 395	Topics in Chinese (Study abroad in China)	
CHIN 495	Topics in Chinese	
ASIA 336	The Emergence of New China	
ASIA 338W	Politics of East Asia	
ASIA 353	Asian Religions	
ASIA 395	Topics in Asian Studies (Study abroad in China)	
ASIA 435	Chinese Politics	
HIST 336	The Emergence of New China	
HIST 439	Politics and Society in East Asia Since 1945	
INBU 433	Doing Business in Asia	
MGMT 462	Comparative International Management	
MGMT 463	Management Seminar Abroad	
PHIL 353	Asian Religions	
PHIL 481	Buddhism	
PHIL 482	Chinese Religion and Philosophy	
POLS 338W	Politics of East Asia	
POLS 435	Chinese Politics	
POLS 437	International Relations in East Asia	

Any study abroad course at the 300-400 level that offers three credits can fulfill one course requirement for this minor. In cases where a study abroad course fits the themes of another interdisciplinary minor, students may request approval from the minor coordinator to use that study abroad course.

# History

Austin Jersild, Chair

## Bachelor of Arts–History Major

Robert Del Corso, Chief Departmental Advisor 683-3949

The Department of History offers a Bachelor of Arts degree that prepares students broadly for modern careers in business, government, and teaching, or for graduate study in history, law, library science, business, or education. The major requires 36 hours of course work. At least 12 hours of History at the 300 and 400 levels must be taken in residence at Old Dominion University.

The Department’s academic offerings reflect the diversity of the faculty, and students are encouraged to sample broadly the course offerings.

The requirements are as follows:

### Lower Division General Education

Written Communication *	6
ENGL 110C English Composition *	
Oral Communication	3
Mathematics	3
Language and Culture **	0-12
Information Literacy and Research ***	
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology ****	0-3
Human Behavior	3
<b>Total Hours</b>	<b>35-50</b>

- \* Grade of C or better required in both courses and in ENGL 110C before declaring major.
- \*\* Proficiency through 202 level: proficiency is not met by completion of an associate degree.
- \*\*\* Satisfied in the major by HIST 201.
- \*\*\*\* May be met in the major by HIST 300T, HIST 304T, HIST 386T or HIST 389T.

### Major Requirements

HIST 100-level electives	6
Select two of the following in addition to the course selected to meet general education	
HIST 100H Interpreting the World Past Since 1500	
HIST 101H Interpreting the Asian Past	
HIST 102H Interpreting the European Past	
HIST 103H Interpreting the Latin America Past	
HIST 104H Interpreting the American Past	
HIST 105H Interpreting the African Past	
HIST 201 Introduction to Historical Methods +	3
HIST 402W Senior Seminar in History ++	3
HIST 300 and 400-level classes +++	21
Field One: United States History	
Field Two: European History	
Field Three: Area Studies (Asia, Latin America, Middle East, Russia, Africa)	

Total Hours	33
+ Meets information literacy and research requirement.	
++ Grade of C or better required.	
+++ With a minimum of one course from three of the four fields listed, one of which must be 400-level.	

### Elective Credit

Elective credit will be needed to meet the minimum requirement of 120 credit hours.

### Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Arts and Humanities Component within the College of Arts and Letters that are not required by the major (6 hours).

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Bachelor of Arts–History Major with a License in History/Social Sciences

The Colleges of Arts and Letters and of Education cooperate in providing a Bachelor of Arts degree that licenses its recipient to teach on the secondary level in the Commonwealth of Virginia. Most other states honor this license. Students must achieve passing scores on the Virginia Board of Education prescribed assessments as a prerequisite for entry into the professional education core. They must also pass the Praxis II exam in order to be admitted to TLED 485 (Student Teaching) and to be licensed. For information on these standardized tests, students should consult with their education advisor. To gain admission to this program, students must have a cumulative grade point average of 2.75 and maintain this average to graduate. Students must also have and maintain a major/content grade point average of 2.75 with grades of C- or higher in all history/social sciences courses and a professional education grade point average of 2.75 with all grades C- or higher in all education courses. The history/social sciences content consists of history, political science, geography, and economics.

Entering students must declare their intention to take their degree in History and Social Sciences in the History Department, whereupon they will be assigned an advisor. Another advisor will be assigned in the College of Education. It is the responsibility of the student to see both advisors regularly.

The requirements are as follows:

### Admission

All students must apply for and be admitted into the approved history and social science teacher preparation program. Students must meet the required criteria for admission by passing the Virginia Board of Education prescribed assessments and earn the minimum required grade point averages (GPA).

### Prescribed Virginia Board of Education Assessment for Admission to an Approved Teacher Education Program

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program.

This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

1. Passing PRAXIS I composite score of 532 by December 31, 2013; **or**
2. Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014:  
Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; **or**
3. Approved substitute test scores:
  - a. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  - b. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
  - c. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
  - d. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
  - e. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
  - f. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
  - g. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
  - h. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
  - i. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**
  - j. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.

*Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

### Required grade point averages (GPA):

- A cumulative GPA of 2.75 is required.
- A major/content GPA of 2.75 is required – all history and social science courses must be passed with a grade of C- or higher.
- A professional education GPA of 2.75 is required – all professional education courses must be passed with a grade of C- or higher.

Although students may enroll in a limited number of education courses, students must be admitted into the approved history and social science teacher preparation program prior to enrolling in any instructional strategies practicum education course. Students must also meet with an education advisor in the Office of Teacher Education Services.

### Continuance

Students must maintain a cumulative GPA of 2.75, a major/content GPA of 2.75 and a professional education GPA of 2.75. History and social science courses must be passed with a grade of C- or higher. The remaining courses required for the major and in the professional education core must be completed with a grade of C- or higher for continuance. A professional education GPA of 2.75 is required for continuance. Students must take and pass the Virginia Communication and Literacy Assessment (VCLA) and the PRAXIS II Social Studies Content examination prior to or while enrolled in the instructional strategies course. All assessments must be passed prior to the start of the Teacher Candidate Internship Orientation session.

### Virginia Board of Education prescribed assessments:

- Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment.

- PRAXIS II Social Studies: Content Knowledge (test code 0081) – passing score of 161 is required

To review more information on the Virginia Board of Education prescribed assessments, visit the Teacher Education Services website, [www.odu.edu/tes](http://www.odu.edu/tes).

### Graduation

Requirements for graduation include completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better; completion of the Senior Assessment; a minimum cumulative 2.75 GPA in the major area and in the professional education core with no grade less than a C- in the major/content and the professional education core; successful completion of the Teacher Candidate Internship, and a minimum of 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University.

Due to changing University requirements, national accreditation standards, and the Virginia Board of Education licensure regulations, the teacher education programs in the College of Arts and Letters are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students are encouraged to obtain current program information from their advisors and from the Teacher Education Services website at [www.odu.edu/tes](http://www.odu.edu/tes).

### Lower Division General Education

Written Communication *	6
Oral Communication	3
Mathematics	3
Language and Culture **	0-12
Information Literacy and Research ***	
Human Creativity	3
Interpreting the Past	3
Select one of the following:	
HIST 100H	Interpreting the World Past Since 1500
HIST 101H	Interpreting the Asian Past
HIST 103H	Interpreting the Latin America Past
HIST 105H	Interpreting the African Past
Literature ****	3
Philosophy and Ethics *****	3
The Nature of Science	8
Impact of Technology *****	
Human Behavior	3
ECON 200S	Basic Economics *****
ECON 201S	Principles of Macroeconomics
ECON 202S	Principles of Microeconomics
Total Hours	38-53

\* Grade of C or better required in both courses and in ENGL 110C before declaring major.

\*\* Proficiency through 202 level; proficiency is not met by completion of an associate degree.

\*\*\* Satisfied by HIST 201.

\*\*\*\* FLET 100L recommended

\*\*\*\*\* PHIL 250E recommended.

\*\*\*\*\* Satisfied by TLED 430.

\*\*\*\*\*ECON 200S is recommended; however, ECON 201S together with ECON 202S are acceptable.

### Major Requirements

SOC 201S	Introduction to Sociology	3
or ANTR 110S	Introduction to Anthropology	

HIST 102H	Interpreting the European Past	3
HIST 104H	Interpreting the American Past	3
HIST 201	Introduction to Historical Methods *	3
HIST 356	Virginia History	3
HIST 402W	Senior Seminar in History **	3
HIST 300 and 400-level classes ***		12
Field One: United States History		
Field Two: European History		
Field Three: Area Studies ****		
Field Four: Comparative History *****		
Total Hours		30

- \* Satisfies information literacy and research requirement.
- \*\* Grade of C or better required.
- \*\*\* With a minimum of one class from three of the four fields listed, one of which must be 400-level.
- \*\*\*\* Asia, Latin America, Middle East, Africa
- \*\*\*\*\* History 302 recommended.

### Professional Education Core

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 430	PK-12 Instructional Technology *	3
TLED 455	Developing Instructional Strategies for Teaching in the Middle/High School: Social Studies	3
TLED 483	Seminar in Teacher Education	1
TLED 485	Teacher Candidate Internship	12
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
Total Hours		33

- \* Satisfies impact of technology requirement.

### History and Social Sciences License Requirements

<b>Geography courses:</b>		9
GEOG 100S	Cultural Geography	
GEOG 300	Maps and Geographic Information	
GEOG 305	World Resources	
or GEOG 320	Political Geography	
<b>Political Science courses:</b>		9
POLS 101S	Introduction to American Politics	
POLS 331	State and Local Government	
or POLS 334	Electoral Politics	
and select one of the following:		
POLS 309	Race, Culture and Public Policy	
POLS 310	Political Theory	
POLS 312	American Political Thought	
POLS 314	European Politics	
POLS 316	Politics of Africa	
POLS 323	International Political Economy	
POLS 328	Russian Politics	
POLS 337	Latin American Politics	
POLS 338W	Politics of East Asia	
POLS 350T	Technology and War	

POLS 400	Congress	
POLS 407	American Presidency	
POLS 409	American Constitutional Law and Politics II	
POLS 410	African American Politics	
POLS 415	Women and Politics in America	
Total Hours		18

### Upper Division General Education

Students in the secondary education licensure program satisfy the Upper Division General Education requirement through their professional education courses.

### Accelerated Bachelor of Arts and Master of Arts–History

Students with exceptional academic skills can enter this program and count up to 12 credit hours of graduate history courses toward both an undergraduate and graduate degree, making it possible to earn both a B.A. and M.A. in history within five years.

### Admission Requirements

To be admitted to the program, students must be a declared major in history, have completed a minimum of 60 undergraduate credit hours, including at least nine hours in history courses at the 300-level or above, and have a GPA of 3.30 or better overall and in history.

### Admission Procedures

Students who meet the admission requirements should consult with the graduate program director no later than the spring or summer prior to their senior year to plan graduate courses to be taken as an undergraduate. During their senior year, students must file an application to the M.A. program in history with the Office of Admissions. This application includes an Old Dominion University graduate application, a 500-word personal statement, two letters of recommendation, and Graduate Record Examination scores. Graduate admission deadlines apply.

Once students have been awarded their B.A. degree and fulfilled all regular admission requirements for the M.A. in history, they will be officially admitted into the M.A. program.

### Requirements for the Accelerated B.A./M.A. Program

Students in the program will fulfill all regular admission and curricular requirements for both the B.A. and M.A. in history, with the following exceptions:

- Upon completing 90 hours of undergraduate work and attaining senior status, admitted students may take up to 12 hours of graduate courses as an undergraduate, provided that those courses fulfill curricular requirements for both the B.A. and M.A. degrees in history.
- Students will need to complete the following major requirements for the B.A.:

HIST 100-level elective: *		9
Select two of the following:		
HIST 100H	Interpreting the World Past Since 1500	
HIST 101H	Interpreting the Asian Past	
HIST 102H	Interpreting the European Past	
HIST 103H	Interpreting the Latin America Past	
HIST 104H	Interpreting the American Past	
HIST 105H	Interpreting the African Past	
HIST 201	Introduction to Historical Methods **	3
HIST 402W	Senior Seminar in History	3
HIST 300 and 400-level classes ***		21
Field One: United States History		
Field Two: European History		

Field Three: Area Studies (Asia, Latin America, Middle East, Russia, Africa)

Field Four: Comparative History

Total Hours 36

- \* Including the three hours selected for the general education requirement.
- \*\* Meets information literacy and research requirement.
- \*\*\* A minimum of one class from three of the four fields listed, one of which must be 400-level

Up to 12 credits of graduate-level course work taken as an undergraduate during the senior year can substitute for 300- and 400-level requirements above and will be counted toward the B.A. degree in history. The following guidelines apply:

A. Any 500-level course that is cross listed with a 400-level course may be substituted for the 400-level course; however, the student cannot take a 500-level course which has already been taken at the 400 level. Only nine credits of 500-level course work will count toward the M.A. degree.

B. The following courses can be taken to fulfill the 300-400 level American elective requirement:

HIST 602	Studies in American Colonial and Revolutionary History	3
HIST 604	Studies in American History, 1787-1877	3
HIST 608	Studies in American History, 1933 to the Present	3
HIST 612	Studies in the History of the South	3
HIST 616	Studies in American Diplomatic History	3
HIST 618	Studies in American Social History	3

C. The following courses can be taken to fulfill the 300-400 level European elective requirement:

HIST 633	Studies in International History	3
HIST 650	Studies in Ancient History	3
HIST 652	Studies in Medieval History	3
HIST 654	Studies in European History from 1350-1600	3
HIST 656	Studies in European History from 1600-1815	3
HIST 658	Studies in European History from 1815-1914	3
HIST 660	Studies in European History from 1914 to the Present (European topics)	3

D. The following courses can be taken to fulfill the 300-400 level elective requirement in African, Asian, Latin American, Middle Eastern, or Russian history:

HIST 640	Studies in East Asian History	3
HIST 645	Studies in Latin American History	3
HIST 658	Studies in European History from 1815-1914	3
HIST 660	Studies in European History from 1914 to the Present	3

3. All graduate courses taken as an undergraduate that are completed with a grade of B (3.0) or better will also count toward the 30-credit M.A. degree in history.

Students should consult the Graduate Catalog for information and requirements for the M.A. in history.

## Minor in History

The history minor consists of 15 semester hours, of which at least 12 must be at the 300 level or above. At least six hours of upper-level courses must be taken through courses offered by Old Dominion University.

For completion of a minor a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses.

## Advanced Placement

Students may earn advanced placement credit for HIST 102H or HIST 104H with a qualifying score on the American or European History Advanced Placement of the College Board exam or from a qualifying score on the CLEP exam. Consult the Testing Center for further information on advanced placement.

## Humanities

Avi Santo, Director, Institute of Humanities  
757 683-3823 [www.al.odu.edu/hum/](http://www.al.odu.edu/hum/)

## Accelerated Master of Arts in Humanities—Communication, Human Geography, Individualized Interdisciplinary Studies, Philosophy, Visual Arts, and Women’s Studies

This accelerated degree program makes it possible for students with a demonstrated record of academic excellence to earn both a B.A. or B.S. in their discipline and an M.A. in humanities in five years. Exceptional majors in Art, Art History, Communication, Geography, Individualized Interdisciplinary Studies, Philosophy, and Women’s Studies can take up to 12 hours of graduate courses while completing their undergraduate degree. Graduate courses taken will be counted towards both an undergraduate and graduate degree.

## Admission Requirements

To be admitted to the program, students must declare a major in Art, Art History, Communication, Geography, Individualized Interdisciplinary Studies, Philosophy, or Women’s Studies B.A or B.S. and complete a minimum of at least 60 undergraduate credit hours, including at least six hours of 300/400 level courses in the major. At the time of admission to the accelerated program, students must have an overall undergraduate GPA of 3.25 or better.

## Admission Procedure

Interested students who meet the admission requirements should apply to the humanities graduate program director as soon as possible after completing the required 60 undergraduate hours. In consultation with the chair or director of their department and the humanities graduate program director, students will:

1. Draft a schedule of graduate courses to be taken as an undergraduate, which will be placed in the student’s undergraduate and graduate advising files.
2. Submit an Old Dominion University graduate application, a 500-word personal statement, a sample critical/analytical essay or research paper, two letters of recommendation, and GRE scores to the Office of Admissions during their senior year.

Students will be officially admitted into the M.A. in humanities program once they have been awarded their bachelor’s degree and have fulfilled all regular admission requirements for the M.A. in humanities. (Please refer to the appropriate section of this catalog for information on the requirements for the bachelor’s degree in Art, Art History, Communication, Geography, Individualized Interdisciplinary Studies, Philosophy, and Women’s Studies.)

## Bridge Courses

Students admitted to the accelerated program may count up to 12 hours of bridge courses (graduate courses taken as an undergraduate) for which they have earned a grade of B (3.0) or better toward both the specific B.A. or B.S. and the M.A. in humanities. These courses may be 500 or 600 level courses within or cross-listed with the discipline, or approved graduate courses. Any 500-level course that is cross listed with a 400-level course may be



substituted for the 400 level-course. However, all students must complete an undergraduate writing intensive course in the major. Students who complete less than 12 bridge course credits may fulfill humanities program requirements by taking courses during summer sessions and/or an additional semester; however, all students are required to fulfill a minimum of six bridge course credits in order to be eligible to continue in the accelerated program.

## The M.A. in Humanities

Students in the accelerated program will fulfill all normal admission and curricular requirements for both a B.A. or B.S. in their discipline and an M.A. in humanities, with the following exceptions, conditions, and requirements.

1. In addition, all students, regardless of their concentration, are required to take:

HUM 601	Introduction to the Humanities	3
HUM 602	Theory and Methods in Humanities	3
HUM 603	Preparing Humanities Teachers & Scholars Pro-seminar	3
HUM 694	Interdisciplinarity and the Humanities: Theory and Practice	3

\* HUM 694, the capstone seminar for accelerated humanities M.A. students, will be taken in the final semester of study before the completion of the M.A. degree. Students will be required to complete a substantive research project which is scholarly in nature, reflecting the student's training in the discipline and the humanities.

2. No more than 12 hours of graduate credit at the 500-level may be applied to the M.A. in humanities.
3. Students will not be permitted to take any 500-level course that they have already taken at the undergraduate 400 level.
4. Art/Art History students must take at least two 600-level courses offered by the Department of Art (<http://www.odu.edu/artdept>). Students must take ARTH 610 Visual Arts Across Media and Time. Graduate courses taken through departments other than Humanities and Art/Art History will count toward the M.A. only if they are approved in advance by the chair of Art or its director of graduate studies.
5. Communication students must take at least two 600-level graduate courses offered by the Department of Communication and Theatre Arts (<http://www.odu.edu/commtheatre>). Courses taken through departments other than Humanities and Communication and Theatre Arts must correspond to the student's declared concentration area. No more than six credit hours may be concentrated in any one department other than Humanities or Communication and Theatre Arts.
6. Geography students must take at least two 600-level courses offered by the Department of Political Science and Geography (<https://www.odu.edu/pols-geog>). Graduate courses taken through departments other than Humanities and Political Science Department and Geography will count toward the M.A. only if they are approved in advance by the chair of Political Science and Geography or its director of graduate studies.
7. Philosophy students must take at least two 600-level courses offered by the Department of Philosophy and Religious Studies. (<http://www.odu.edu/philosophy>) Graduate courses taken through departments other than Humanities and Philosophy and Religious Studies will count toward the M.A. only if they are approved in advance by the chair of Philosophy and Religious Studies or its director of graduate studies.
8. Women's Studies students will be required to take graduate-level courses that focus on women and/or gender in relation to various aspects of culture and the humanities. Students may elect graduate courses in women's studies, as well as courses that are cross-listed with women's studies, from any designated humanities or social science department, such as history, linguistics, literature, sociology, psychology, international studies, etc., or courses approved by the director of women's studies. However, no more than six credit hours

may be concentrated in any one discipline other than humanities and women's studies.

9. There is no thesis option for students in the accelerated M.A. in humanities program. Students who wish to write a thesis may elect at any time to change over to the standard 36 credit, thesis-track, humanities program.
10. Upon completion of 30 graduate credits, students will be awarded the M.A. in humanities with a concentration in communication, philosophy, individualized interdisciplinary studies, visual studies, human geography, or women's studies.
11. For additional information on the M.A. in humanities, please refer to the Graduate Catalog (<http://catalog.odu.edu/graduate>).

## Interdisciplinary Studies

Elizabeth Esinhart, Director of Interdisciplinary Studies Teacher Preparation  
 Kathleen Fowler, Program Coordinator and Advisor, Individualized Interdisciplinary Studies

Virginia Tucker, Program Coordinator and Advisor, Professional Writing  
 Daniel O'Leary, Program Coordinator and Advisor, Work and Professional Studies

Interdisciplinary Studies coordinates the administration and delivery of four degree programs: the Bachelor of Science in interdisciplinary studies-teacher preparation concentration; the Bachelor of Arts and Bachelor of Science degrees in interdisciplinary studies-individualized programs; and the Bachelor of Science in interdisciplinary studies-professional writing and work and professional studies.

## Bachelor of Science Degree — Interdisciplinary Studies Major — Teacher Preparation Concentration

Elizabeth Esinhart, Director  
 Michele Mitchell, Assistant Director and Chief Departmental Advisor

This interdisciplinary studies, teacher preparation degree program (IDS-TP) in the College of Arts and Letters draws courses from four colleges within the University to prepare teacher candidates interested in teaching primary/elementary education or special education to complete content and pedagogical competency requirements for teacher licensure in the Commonwealth of Virginia. In cooperation with the Darden College of Education, primary/elementary education teacher candidates earn full licensure to teach early childhood or elementary education with the completion of both the B.S. degree in Interdisciplinary Studies, primary/elementary emphasis, and the Master of Science in Education. Special education teacher candidates earn full licensure to teach special education, general curriculum, K-12 with the completion of the B.S. degree in Interdisciplinary Studies, special education emphasis. Additionally, Special Education teacher candidates will be highly qualified to teach elementary content or secondary English content.

Course work in the baccalaureate degree spans the disciplines of English literature, composition, and linguistics; history; fine and performing arts; mathematics and statistics; natural sciences including biology, chemistry, physics, and ocean or earth science; social sciences including economics, geography, and political science; human growth and development; and educational foundations, technology, and methods. The broad curriculum, along with the admittance, continuance, and graduation requirements described below, prepares teacher candidates to meet state licensure standards for the Commonwealth of Virginia, including passing scores on the Praxis II specialty area exams, Reading for Virginia Educators Assessment, and Virginia Communication and Literacy Assessment, and to meet graduate admission requirements to the Darden College of Education.

Teacher candidates can choose from the following undergraduate emphasis tracks:

- Primary/Elementary Education Emphasis (no licensure with B.S. degree, licensure at graduate level through Darden College of Education)

- Special Education, General Curriculum, K-12, Highly Qualified to Teach Elementary Education Emphasis (licensure with B.S. degree)
- Special Education, General Curriculum, K-12, Highly Qualified to Teach Secondary English and Elementary Education Emphasis (licensure with B.S. degree)

Each emphasis track is described below, and additional information is posted on the departmental website or available in hardcopy from the department.

## Admission

To be admitted to and advised in the IDS-TP program, teacher candidates must have a grade of C or above in ENGL 110C and 26 completed credit hours.

## Declaration of Major

To declare the major, teacher candidates must have a 2.80 cumulative grade point average and grades of C or above in any course required in the program, and pass the prescribed Virginia Board of Education assessment for admission to an approved teacher education program as described herein. Teacher candidates who have been admitted to the IDS-TP program but who are ineligible to declare the major will be advised as prospective majors within the program.

## Prescribed Virginia Board of Education Assessment for Admission to an Approved Teacher Education Program

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program. This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

1. Passing PRAXIS I composite score of 532 by December 31, 2013; or
2. Passing PRAXIS Core Academic Skills Test beginning January 1, 2014: Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; or
3. Approved substitute test score for PRAXIS I or PRAXIS Core:
  - a. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; or
  - b. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; or
  - c. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995. ACT scores taken prior to 1989 are not valid; or
  - d. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; or
  - e. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; or
  - f. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; or
  - g. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; or
  - h. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; or
  - i. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; or
  - j. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

## Admission to Undergraduate Teacher Education Program

All teacher candidates must be admitted to the undergraduate teacher education program as a requirement of continuance and graduation. Admittance to the undergraduate teacher education program requires that the teacher candidate:

1. Be a declared IDS-TP major
2. Have a cumulative GPA of 2.80
3. Have a major GPA of 2.80 (major content plus professional education courses)
4. Have a 2.80 GPA in major content courses
5. Have a 2.80 GPA in professional education courses
6. Have no grade below a C in any course required in the program
7. Pass the prescribed Virginia Board of Education admission assessment described above
8. Submit an application for admittance that is approved by the program and by the Office of Teacher Education Services in the Darden College of Education

Additionally, teacher candidates must be admitted to the undergraduate teacher education program by the end of their 60<sup>th</sup> credit hour. Transfer students with 60 or more credits must be admitted to the undergraduate teacher education program by the end of their second semester enrolled at the University.

## Continuance

Teacher candidates must:

1. Maintain a cumulative grade point average of 2.80, 2.80 major GPA, 2.80 major content GPA and 2.80 professional education GPA
2. Earn a grade no less than C in all general education courses required in the program, major content courses, and professional education courses
3. Pass the prescribed Virginia Board of Education admission assessment described above
4. Be admitted to the undergraduate teacher education program.

All teacher candidates who fail to meet program requirements must meet with an advisor and complete a Continuance Notice. Teacher candidates who fail to meet program requirements for two consecutive semesters will be encouraged to consider other academic and professional goals. In addition, teacher candidates must pass the prescribed Virginia Board of Education admission assessment describe above, be admitted to the undergraduate teacher education program and meet all other prerequisites listed in the Catalog course description to be eligible to take the following courses:

TLED 478	Integrating Instruction Across the Curriculum PreK-6	3
TLED 479	Classroom Management and Practice PreK-3; PreK-6	3
SPED 403	Directed Field Experience in Special Education	2
SPED 415	Instructional Design II: Curricular Procedures and Individualized Education Planning	3
SPED 483	Field Experience Seminar in Special Education	1
SPED 486	Teacher Candidate Internship for Special Endorsement	12

Additionally, passing scores on the Special Education exit exam, the Reading for Virginia Educators Assessment, Virginia Communication and Literacy Assessment, and Praxis II specialty area exam(s) are required in SPED 483 and are a prerequisite to enrollment in SPED 486. All teacher candidates must consult with an academic advisor every semester to review their academic progress.

## Graduation

To graduate, teacher candidates must:

1. Complete all program requirements
2. Earn a grade of no less than C in every general education course required in the program, major content course, and professional education course
3. Have a cumulative grade point average of 2.80 and 2.80 major GPA.

In addition, teacher candidates must have the prescribed Virginia Board of Education admission assessment described above and passing scores on any other Assessment test required by their emphasis area as provided above, be admitted to the approved undergraduate teacher education program, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and complete the Senior Assessment Exam. Teacher candidates will also be requested to complete the Departmental Senior Exit Survey.

The following requirements also apply:

## Special Education

Special Education teacher candidates earn licensure with the B.S. degree and must obtain passing scores on the Special Education exit exam, the appropriate Praxis II specialty area exam(s), Reading for Virginia Educators Assessment, and Virginia Communication and Literacy Assessment prior to completion of SPED 483 and prior to enrollment in SPED 486. Test results will be submitted to the director of the Office of Teacher Education Services. Special Education teacher candidates must also submit a professional portfolio according to Darden College of Education and program requirements prior to completion of the B.S. degree and as a condition of continuance and graduation.

Note for students in Washington State from the Student Achievement Council (SAC) concerning the teacher preparation with licensure in special education, general curriculum K-12, and highly qualified designation in elementary education: Eligibility for initial educator certification in Washington is based on completion of a state approved educator preparation program. This program is approved in Virginia and is authorized for field placements in Washington by the Professional Educators Standards Board. Even though students may be residing in Washington while in this program, the application for educator certification in Washington will be processed as an out-of-state application. Go to <http://pathway.pesb.wa.gov/outofstate> for more information. Teachers are advised to contact their individual school districts as to whether this program may qualify for teacher advancement.

## Primary/Elementary Education

For Primary/Elementary Education teacher candidates, admission to the graduate programs in elementary education and early childhood education requires a cumulative grade point average of 2.80 and completion of the graduate application, which includes the GRE or MAT. Teacher candidates with a cumulative GPA of 3.30 and passing scores on all three sections of Praxis I (178 math, 178 reading, and 176 writing) prior to December 31, 2013 or passing scores on PRAXIS Core Academic Skills Tests (150 Math, 156 Reading, 162 Writing) beginning January 1, 2014 or a combination of passed PRAXIS I scores (Math 178, Reading 178, Writing 176) by December 31, 2013 and passed PRAXIS Core scores (Math 150, Reading 156, Writing 162) beginning January 1, 2014 or Virginia Board of Education qualifying SAT or ACT scores only will be eligible for Fast-Track admission to the graduate programs in teacher education. Fast-track admission requires a student to comply with all graduate admission criteria except the submission of GRE or MAT scores. Teacher candidates earn licensure to teach in elementary education or early childhood education upon completion of the master's degree in the Darden College of Education. Prior to starting the teacher candidate internship (student teaching), all teacher candidates must obtain passing scores on the appropriate Praxis II specialty area exam, Reading for Virginia Educators Assessment, and Virginia Communication and Literacy Assessment. Test results will be submitted to the director of the Office of Teacher Education Services. Prior to the start of the teacher candidate internship, all teacher candidates should review their Leo Online student test score page to ensure that passing scores are posted for the

appropriate PRAXIS I, PRAXIS Core, or approved substitute assessment, PRAXIS II specialty area exam, Reading for Virginia Educators Assessment, and the Virginia Communication and Literacy Assessment.

Note for students in Washington State from the Student Achievement Council (SAC) concerning the primary/elementary education emphasis: This program is not intended to lead to teacher certification. Teachers are advised to contact their individual school districts as to whether this program may qualify for teacher advancement.

Please see the College of Education sections of the Undergraduate and Graduate Catalogs or the Darden College of Education website for more information.

Due to changing University requirements, national accreditation standards, and Commonwealth licensure regulations, the teacher preparation programs in the College of Arts and Letters are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students are encouraged to obtain current program information from their academic advisors and from the Darden College of Education website at [www.education.odu.edu](http://www.education.odu.edu),

Program curriculum requirements are listed below.

## Primary/Elementary Emphasis\* (also offered through Distance Learning)

### General Education Courses

ENGL 110C	English Composition **	3
ENGL 211C	English Composition **	3
Select one of the following:		3
ENGL 112L	Introduction to Literature	
ENGL 114L	American Writers, American Experiences	
FLET 100L	Understanding World Literature	
Language and Culture (See Requirements for Undergraduate Degrees section of this Catalog for requirement)		0-6
COMM 101R	Public Speaking **	3
or		
COMM 103R	Voice and Diction **	
Information Literacy and Research		3
ARTH 121A	Introduction to the Visual Arts **+	3
or		
MUSC 264A	Music in History and Culture **+	
HIST 104H	Interpreting the American Past **	3
Impact of Technology (met within major)		
TLED 430	PK-12 Instructional Technology +++	
GEOG 100S	Cultural Geography **	3
Select one of the following:		3
PHIL 110P	Introduction to Philosophy	
PHIL 230E	Introduction to Ethics	
PHIL 250E	World Religions: Beliefs and Values (PHIL 230E or 250E recommended)	
MATH 102M	College Algebra ****	3
or		
MATH 103M	College Algebra with Supplemental Instruction ****	
or		
MATH 162M	Precalculus I ****	
Select one of the following: **		4
BIOL 105N	Biology for Nonscience Majors I	
BIOL 106N	Biology for Nonscience Majors II	

BIOL 110N & BIOL 111N	Environmental Sciences and Environmental Sciences Lab	
BIOL 117N & BIOL 118N	Introduction to Human Biology and Introduction to Human Biology Lab	
BIOL 121N & BIOL 122N	General Biology I and General Biology I Lab	
BIOL 123N & BIOL 124N	General Biology II and General Biology II Lab	
Select one of the following: **		4
CHEM 105N & CHEM 106N	Introductory Chemistry and Introductory Chemistry Laboratory	
CHEM 107N & CHEM 108N	Introductory Organic and Biochemistry and Introductory Organic and Biochemistry Laboratory	
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	
CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	
PHYS 101N	Conceptual Physics	
PHYS 102N	Conceptual Physics	
PHYS 111N	Introductory General Physics	
PHYS 112N	Introductory General Physics	
Total Hours		38-44

### Major Content Requirements

ENGL 327W	Advanced Composition	3
ENGL 350 or ENGL 370	Aspects of the English Language English Linguistics	3
ENGL 336	The Short Story (or approved upper-level literature course)	3
Select one of the following:		3
HIST 100H	Interpreting the World Past Since 1500	
HIST 101H	Interpreting the Asian Past	
HIST 102H	Interpreting the European Past	
HIST 103H	Interpreting the Latin America Past	
HIST 105H	Interpreting the African Past	
HIST 356	Virginia History	3
Select one of the following:		3
HIST 345	Native American History	
HIST 346	Colonial and Revolutionary America	
HIST 348	The Early Republic, 1787-1850	
HIST 350	History of the Old South	
HIST 351	The Civil War and Reconstruction	
HIST 355	The United States, 1945-1991	
HIST 361	African-American History to 1865	
HIST 362	African-American History Since 1865	
HIST 363	Women in U.S. History	
(Or approved upper-level U.S. history topics course)		
Select one of the following:		3
ECON 200S	Basic Economics	
ECON 201S	Principles of Macroeconomics	
ECON 202S	Principles of Microeconomics	
POLS 101S	Introduction to American Politics	3
POLS 331 or POLS 311	State and Local Government Virginia Politics and Government	3
Select one of the following:		3
GEOG 250	World Regional Geography	
GEOG 300	Maps and Geographic Information	
GEOG 350	Geography of the United States and Canada	

GEOG 412	Cities of the World	
GEOG 451	Europe	
GEOG 454W	Latin America	
GEOG 455	The Middle East	
MATH 335	Number Systems and Discrete Mathematics	3
MATH 302	Geometry	3
STAT 130M	Elementary Statistics	3
Select one of the following:		3-4
OEAS 110N	Earth Science	
OEAS 210	Environmental Earth Science	
OEAS 302	Environmental Geology	
OEAS 402	Field Experiences in Oceanography for Teachers	
HPE 327	Teaching of Health and Physical Education, Pre-K-8	3
One Physical Education activity credit		1
Select one of the following: +		3
MUSC 308	Music Education: Music for the Elementary Classroom Teacher	
MUSC 460	History of Jazz	
ARTS 305	Elementary Art Education Methods and Classroom Management	
Approved upper level Human Creativity course		
Total Hours		49-50

### Professional Education (meets upper-division general education)

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 430	PK-12 Instructional Technology <sup>+++</sup>	3
TLED 468	Language Acquisition and Reading for Students with Diverse Learning Needs	3
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
TLED 432	Developing Instructional Strategies PreK-6: Language Arts	3
STEM 433	Developing Instructional Strategies PreK-6: Mathematics	3
STEM 434	Developing Instructional Strategies PreK-6: Science	3
TLED 435	Developing Instructional Strategies PreK-6: Social Studies	3
TLED 478	Integrating Instruction Across the Curriculum PreK-6 <sup>****</sup>	3
TLED 479	Classroom Management and Practice PreK-3; PreK-6 <sup>****</sup>	3
Total Hours		33

Total Degree Credits\*\*\*\* 120-127

\* This undergraduate emphasis track prepares students to matriculate into the graduate program in early childhood education (not offered through Distance Learning) or the graduate program in elementary education (offered through Distance Learning in the Darden College of Education); teacher candidates should consult the directors of these graduate programs for additional information. There is no licensure with the B.S. degree. Student teaching and licensure are at the graduate level through the Darden College of Education.

\*\* Departmental requirements for all teacher candidates, not met by the associate degree.

- \*\*\* Admission to the undergraduate teacher education program is required prior to registration for TLED 478 and TLED 479; TLED 478 will require 40 practicum hours and TLED 479 will require 70 practicum hours (35 hours in grades Pk-3 and 35 hours in grades 4-6).
- \*\*\*\* NOTE: ALL STUDENTS MUST EARN A MINIMUM OF 120 CREDIT HOURS FOR THE BACCALAUREATE DEGREE, WHICH MUST INCLUDE BOTH A MINIMUM OF 30 CREDIT HOURS OVERALL AND 12 CREDIT HOURS OF UPPER-LEVEL COURSES IN THE MAJOR PROGRAM FROM OLD DOMINION UNIVERSITY.
- + If credit is received for ARTH 121A, teacher candidates must take MUSC 308 or MUSC 460 or an approved upper-level Music fine and performing arts course; if credit is received for MUSC 264A, teacher candidates must take ARTS 305 or an approved upper-level Art fine and performing arts course.
- ++ Grade of C or better is required in MATH 102M or MATH 103M or MATH 162M to enroll in MATH 302 and MATH 335
- +++ LiveText is required for all Teacher Candidates in TLED 430.

## Licensure in Special Education, General Curriculum, K-12, Highly Qualified in Elementary Education Emphasis\* (also offered through Distance Learning)

### General Education Courses

ENGL 110C	English Composition **	3
ENGL 211C	English Composition **	3
Select one of the following:		3
ENGL 112L	Introduction to Literature	
ENGL 114L	American Writers, American Experiences	
FLET 100L	Understanding World Literature	
Language and Culture (See Requirements for Undergraduate Degrees section of this Catalog for requirement)		0-6
COMM 101R	Public Speaking **	3
or		
COMM 103R	Voice and Diction **	
Information Literacy and Research		3
ARTH 121A	Introduction to the Visual Arts **+	3
or		
MUSC 264A	Music in History and Culture **+	
HIST 104H	Interpreting the American Past **	3
Impact of Technology (met within major)		
TLED 430	PK-12 Instructional Technology +++	
GEOG 100S	Cultural Geography **	3
Select one of the following:		3
PHIL 110P	Introduction to Philosophy	
PHIL 230E	Introduction to Ethics	
PHIL 250E	World Religions: Beliefs and Values (PHIL 230E or 250E recommended)	
MATH 102M	College Algebra **++	3
or		
MATH 103M	College Algebra with Supplemental Instruction **++	
or		
MATH 162M	Precalculus I **++	
Select one of the following: **		4
BIOL 105N	Biology for Nonscience Majors I	
BIOL 106N	Biology for Nonscience Majors II	

BIOL 110N & BIOL 111N	Environmental Sciences and Environmental Sciences Lab	
BIOL 117N & BIOL 118N	Introduction to Human Biology and Introduction to Human Biology Lab	
BIOL 121N & BIOL 122N	General Biology I and General Biology I Lab	
BIOL 123N & BIOL 124N	General Biology II and General Biology II Lab	
Select one of the following: **		4
CHEM 105N & CHEM 106N	Introductory Chemistry and Introductory Chemistry Laboratory	
CHEM 107N & CHEM 108N	Introductory Organic and Biochemistry and Introductory Organic and Biochemistry Laboratory	
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	
CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	
PHYS 101N	Conceptual Physics	
PHYS 102N	Conceptual Physics	
PHYS 111N	Introductory General Physics	
PHYS 112N	Introductory General Physics	
Total Hours		38-44

### Content Requirements

ENGL 327W	Advanced Composition	3
ENGL 350 or ENGL 370	Aspects of the English Language or English Linguistics	3
ENGL 336	The Short Story (or approved upper-level literature course)	3
Select one of the following:		3
HIST 100H	Interpreting the World Past Since 1500	
HIST 101H	Interpreting the Asian Past	
HIST 102H	Interpreting the European Past	
HIST 103H	Interpreting the Latin America Past	
HIST 105H	Interpreting the African Past	
HIST 356	Virginia History	3
Select one of the following:		3
ECON 200S	Basic Economics	
ECON 201S	Principles of Macroeconomics	
ECON 202S	Principles of Microeconomics	
POLS 101S	Introduction to American Politics	3
MATH 335	Number Systems and Discrete Mathematics	3
MATH 302	Geometry	3
STAT 130M	Elementary Statistics	3
Select one of the following:		3-4
OEAS 110N	Earth Science	
OEAS 210	Environmental Earth Science	
OEAS 302	Environmental Geology	
OEAS 402	Field Experiences in Oceanography for Teachers	
HPE 327	Teaching of Health and Physical Education, Pre-K-8	3
One Physical Education activity credit		1
Select one of the following: +		3
MUSC 308	Music Education: Music for the Elementary Classroom Teacher	
MUSC 460	History of Jazz	
ARTS 305	Elementary Art Education Methods and Classroom Management	

**Professional Education (meets upper-division general education)**

TLED 430	PK-12 Instructional Technology <sup>+++</sup>	3
TLED 408	Reading and Writing in Content Areas	3
TLED 468	Language Acquisition and Reading for Students with Diverse Learning Needs	3
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 400	Foundations of Special Education: Legal Aspects and Characteristics	3
SPED 402	Instructional Design I: Learner Characteristics and Assessment	3
SPED 411	Classroom and Behavioral Management Techniques for Students with Diverse Needs	3
SPED 417	Collaboration and Transitions	3
SPED 415	Instructional Design II: Curricular Procedures and Individualized Education Planning <sup>***</sup>	3
SPED 403	Directed Field Experience in Special Education <sup>***</sup>	2
SPED 483	Field Experience Seminar in Special Education <sup>***++++</sup>	1
SPED 486	Teacher Candidate Internship for Special Endorsement <sup>*****</sup>	12
<b>Total Hours</b>		<b>42</b>

## Total Degree Credits 120-127

\* This undergraduate emphasis track leads to licensure to teach with the B.S. degree. Teacher candidates should consult with the director of special education programs in the Darden College of Education for additional information.

\*\* Departmental requirements for all teacher candidates, not met by the associate degree.

\*\*\* Admission to undergraduate teacher education program required prior to registration for SPED 415, SPED 403, SPED 483, and SPED 486. SPED 415 and SPED 403 will each require 45 practicum hours. Teacher candidates should request an elementary school placement in SPED 415 and a middle/high school placement in SPED 403. In SPED 486 teacher candidates will student teach 7 weeks at the elementary level and 7 weeks at the secondary level.

\*\*\*\* NOTE: ALL STUDENTS MUST EARN A MINIMUM OF 120 CREDIT HOURS FOR THE BACCALAUREATE DEGREE, WHICH MUST INCLUDE BOTH A MINIMUM OF 30 CREDIT HOURS OVERALL AND 12 CREDIT HOURS IN UPPER-LEVEL COURSES IN THE MAJOR PROGRAM FROM OLD DOMINION UNIVERSITY.

+ If credit is received for ARTH 121A, teacher candidates must take MUSC 308 or MUSC 460 or an approved upper-level Music fine and performing arts course; if credit is received for MUSC 264A, teacher candidates must take ARTS 305 or an approved upper-level Art fine and performing arts course.

++ Grade of C or better is required in MATH 102M or MATH 103M or MATH 162M to enroll in MATH 302 and MATH 335

+++ LiveText is required for all Teacher Candidates in TLED 430.

++++ Passing scores on the Special Education exit exam, the Reading for Virginia Educators Assessment, Virginia Communication and Literacy Assessment, and Praxis II (0014 or 5014) Elementary Education Content Knowledge Test are required in SPED 483 and prior to SPED 486.

**Licensure in Special Education, General Curriculum, K-12, Highly Qualified in Secondary English and Elementary Education Emphasis – (not offered through Distance Learning)\*****General Education Courses**

ENGL 110C	English Composition <sup>**</sup>	3
ENGL 211C	English Composition <sup>**</sup>	3
Select one of the following: <sup>**</sup>		3
ENGL 112L	Introduction to Literature	
ENGL 114L	American Writers, American Experiences	
FLET 100L	Understanding World Literature	
Language and Culture (See Requirements for Undergraduate Degrees section of this catalog for requirement)		0-6
COMM 101R	Public Speaking <sup>**</sup>	3
or		
COMM 103R	Voice and Diction <sup>**</sup>	
Information Literacy and Research		3
ARTH 121A	Introduction to the Visual Arts <sup>**</sup>	3
or		
MUSC 264A	Music in History and Culture <sup>**</sup>	
HIST 104H	Interpreting the American Past <sup>**</sup>	3
Impact of Technology (met within major)		
TLED 430	PK-12 Instructional Technology <sup>++</sup>	
GEOG 100S	Cultural Geography <sup>**</sup>	3
Select one of the following:		3
PHIL 110P	Introduction to Philosophy	
PHIL 230E	Introduction to Ethics	
PHIL 250E	World Religions: Beliefs and Values	
(PHIL 230E or 250E recommended)		
MATH 102M	College Algebra <sup>***</sup>	3
or		
MATH 103M	College Algebra with Supplemental Instruction <sup>***</sup>	
or		
MATH 162M	Precalculus I <sup>***</sup>	
Select one of the following: <sup>**</sup>		4
BIOL 105N	Biology for Nonscience Majors I	
BIOL 106N	Biology for Nonscience Majors II	
BIOL 110N & BIOL 111N	Environmental Sciences and Environmental Sciences Lab	
BIOL 117N & BIOL 118N	Introduction to Human Biology and Introduction to Human Biology Lab	
BIOL 121N & BIOL 122N	General Biology I and General Biology I Lab	
BIOL 123N & BIOL 124N	General Biology II and General Biology II Lab	
Select one of the following: <sup>**</sup>		4
CHEM 105N & CHEM 106N	Introductory Chemistry and Introductory Chemistry Laboratory	
CHEM 107N & CHEM 108N	Introductory Organic and Biochemistry and Introductory Organic and Biochemistry Laboratory	
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	

CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	
PHYS 101N	Conceptual Physics	
PHYS 102N	Conceptual Physics	
PHYS 111N	Introductory General Physics	
PHYS 112N	Introductory General Physics	
Total Hours		38-44

### Content Requirements

ENGL 327W	Advanced Composition	3
ENGL 350	Aspects of the English Language	3
ENGL 370	English Linguistics	3
ENGL 301 or ENGL 302	Introduction to British Literature I or Introduction to British Literature II	3
ENGL 336	The Short Story (or approved upper-level literature course)	3
ENGL 345 or ENGL 346	American Literature to 1860 or American Literature Since 1860	3
ENGL 406	The Teaching of Literature	3
ENGL 455	The Teaching of Composition, Grades 6-12	3
Select one of the following:		3
HIST 100H	Interpreting the World Past Since 1500	
HIST 101H	Interpreting the Asian Past	
HIST 102H	Interpreting the European Past	
HIST 103H	Interpreting the Latin America Past	
HIST 105H	Interpreting the African Past	
HIST 356	Virginia History	3
Select one of the following:		3
ECON 200S	Basic Economics	
ECON 201S	Principles of Macroeconomics	
ECON 202S	Principles of Microeconomics	
POLS 101S	Introduction to American Politics	3
MATH 335	Number Systems and Discrete Mathematics	3
MATH 302	Geometry	3
STAT 130M	Elementary Statistics	3
Select one of the following:		3-4
OEAS 110N	Earth Science	
OEAS 210	Environmental Earth Science	
OEAS 302	Environmental Geology	
OEAS 402	Field Experiences in Oceanography for Teachers	
HPE 327	Teaching of Health and Physical Education, Pre-K-8	3
Total Hours		51-52

### Professional Education (meets upper-division general education)

TLED 430	PK-12 Instructional Technology <sup>++</sup>	3
TLED 408	Reading and Writing in Content Areas	3
TLED 468	Language Acquisition and Reading for Students with Diverse Learning Needs	3
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 400	Foundations of Special Education: Legal Aspects and Characteristics	3
SPED 402	Instructional Design I: Learner Characteristics and Assessment	3
SPED 411	Classroom and Behavioral Management Techniques for Students with Diverse Needs	3

SPED 417	Collaboration and Transitions	3
SPED 415	Instructional Design II: Curricular Procedures and Individualized Education Planning <sup>***</sup>	3
SPED 403	Directed Field Experience in Special Education <sup>***</sup>	2
SPED 483	Field Experience Seminar in Special Education <sup>*****</sup>	1
SPED 486	Teacher Candidate Internship for Special Endorsement <sup>*****</sup>	12
Total Hours		42

Total Degree Credits\*\*\*\* 131-138

- \* This undergraduate emphasis track leads to licensure to teach with the B.S. degree. Teacher candidates should consult with the director of special education programs in the Darden College of Education for additional information.
- \*\* Departmental requirements for all teacher candidates, not met by the associate degree.
- \*\*\* Admission to undergraduate teacher education program required prior to registration for SPED 415, SPED 403, SPED 483, and SPED 486. SPED 415 and SPED 403 will each require 45 practicum hours. Teacher candidates should request an elementary school placement in SPED 415 and a middle/high school placement in SPED 403. In SPED 486 teacher candidates will student teach 7 weeks at the elementary level and 7 weeks at the secondary level.
- \*\*\*\* NOTE: ALL STUDENTS MUST EARN A MINIMUM OF 120 CREDIT HOURS FOR THE BACCALAUREATE DEGREE, WHICH MUST INCLUDE BOTH A MINIMUM OF 30 CREDIT HOURS OVERALL AND 12 CREDIT HOURS IN UPPER-LEVEL COURSES IN THE MAJOR PROGRAM FROM OLD DOMINION UNIVERSITY.
- + Grade of C or better is required in MATH 102M or MATH 103M or MATH 162M to enroll in MATH 302 and MATH 335
- ++ LiveText is required for all Teacher Candidates in TLED 430.
- +++ Passing scores on the Special Education exit exam, the Reading for Virginia Educators Assessment, Virginia Communication and Literacy Assessment, and Praxis II (0014 or 5014) Elementary Education Content Knowledge Test are required in SPED 483 and prior to SPED 486.

## Bachelor of Arts and Bachelor of Science —Interdisciplinary Studies (IDS) Major, Individualized Integrative Studies (IIS)

[www.al.odu.edu/ids/iis/](http://www.al.odu.edu/ids/iis/)  
 Kathleen Fowler, Program Coordinator and Advisor  
 kfowler@odu.edu

Individualized interdisciplinary studies at Old Dominion University is a degree program that seeks to serve the needs of students whose goals cannot be met within existing departmental curricula. Through interdisciplinary studies, students are able to combine courses from three or more disciplines into an individualized degree. The program makes possible the pursuit of a wide variety of interests in areas such as medieval and renaissance studies, advertising, legal studies, ecological studies, public relations, management of technical services, photo journalism, and health care administration.

Students who decide to design their own degrees must have departmental approval and faculty sponsorship. The degree awarded is a Bachelor of Science or Bachelor of Arts with a major in interdisciplinary studies in the student's area of interest.

## Requirements

### Lower Division General Education

Written Communication *	6
Oral Communication	3
Mathematics	3
Language and Culture **	0-12
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology	3
Human Behavior	3
Total Hours	41-53

\* Grade of C or better required in both courses and in ENGL 110C before declaring major.

\*\* Proficiency through 202 required for BA; not met by completion of an associate degree

### Individualized Program Core Requirements

IDS 300W	Interdisciplinary Theory and Concepts *	3
IDS Integration Project (Select one of the following): **		3
IDS 368	Internship in Interdisciplinary Studies	
IDS 497	IDS Individualized Senior Project	
IDS 493	IDS Electronic Portfolio Project	

\* Grade of C or better required

\*\* Senior standing and completion of IDS 300W are required for enrollment in IDS 368, 493, or 497.

### Concentration

All individualized program students must design a concentration that includes a minimum of 42 credit hours. This includes courses from three or more disciplines that the student integrates into a single program, subject to departmental approval. At least 30 hours must be upper level. No more than two-thirds of the major area may be in one discipline.

All IDS individualized program students must prepare and submit a proposal to the Interdisciplinary Studies Committee for approval. The purpose of the proposal is to outline the courses and other learning experiences that will lead to the fulfillment of the proposed course of study. Students must have at least 30 hours of course work left in their overall degree program (this can include current and proposed courses) when the proposal is submitted to the IDS Committee. Students must complete at least 15 hours of course work in their major after acceptance into the program. Any exceptions must be approved by the IDS Committee. Students must also identify two faculty sponsors who will provide guidance as they develop their proposals and progress through the program. Acceptance decisions are made by the director of Interdisciplinary Studies, the Interdisciplinary Studies Committee, and faculty sponsors. For more information see <http://al.odu.edu/ids/iis/>.

Students must receive a grade of C- or better in all courses taken within the concentration area.

### Electives

Elective courses may be taken for the remainder of the minimum 120 credits required for the degree.

### Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major

- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from another Component within the College of Arts and Letters (Arts and Humanities or Social Science) that are not required by the major (6 hours). The program coordinator will specify six credits of upper-division course work outside of the major areas that can be used for this option.

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Bachelor of Science Degree- Interdisciplinary Studies Major- Professional Writing Concentration

Virginia M. Tucker, Program Coordinator and Advisor

The professional writing program produces graduates capable of moving into professional and technical writing fields. Students in the program complete a core of courses in technical writing as well as in business, communication, and human resources. The program is ideal for returning students already working who are interested in expanding their management skills and/or increasing their eligibility for promotion.

Course requirements are as follows.

### Lower Division General Education

Written Communication *	6
Oral Communication	3
Mathematics	3
Language and Culture **	0-6
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics ***	0-3
The Nature of Science	8
Impact of Technology ****	
Human Behavior	3
Total Hours	35-44

\* Grade of C or better required in both courses and in ENGL 110C before declaring major.

\*\* See Requirements for Undergraduate Degrees section of this catalog for requirement.

\*\*\* Can be met by PHIL 303E

\*\*\*\* Met by ENGL 307T.

### Core Courses required of all students (required grade of C or better in IDS 300W and C- or better in the remaining courses)

IDS 300W	Interdisciplinary Theory and Concepts	3
ENGL 325	Introduction to Rhetorical Studies	3
ENGL 327W	Advanced Composition	3
ENGL 334W	Technical Writing	3



ENGL 307T	Digital Writing (meets impact of technology requirement)	3
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Total Hours 15

**Organizational Foundations (required grade of C- or better; meets upper-division general education)**

Select four from the following: 12

CS 300T	Computers in Society
MGMT 325	Contemporary Organizations and Management
MGMT 340	Human Resources Management
MGMT 451	Organizational Behavior
MKTG 311	Marketing Principles and Problems
MKTG 402	Consumer Behavior
MKTG 411	Multi-National Marketing
PHIL 303E	Business Ethics
PSYC 303	Industrial/Organizational Psychology
PSYC 343	Personnel Psychology
PSYC 344	Human Factors
PSYC 345	Organizational Psychology

Total Hours 12

**Additional Hours in Professional Writing (required grade of C- or better)**

Select four from the following: 12

ENGL 335	Editing and Document Design
ENGL 350	Aspects of the English Language
ENGL 368	Writing Internship
ENGL 370	English Linguistics
ENGL 380	Reporting and News Writing I
ENGL 381	Public Relations
ENGL 395/396	Topics in English
ENGL 427W	Writing in the Disciplines
ENGL 435W	Management Writing
ENGL 468	Advanced Writing Internship
ENGL 477	Language, Gender and Power
ENGL 481	Advanced Public Relations
ENGL 484	Feature Story Writing
ENGL 485W	Editorial and Persuasive Writing
ENGL 486	Media Law and Ethics
ENGL 495/496	Topics in English

Total Hours 12

**Additional Hours in Communication (required grade of C- or better)**

Select two of the following: 6

COMM 302	Communication Research Methods I
COMM 303	Introduction to Public Relations
COMM 304	Advanced Public Speaking
COMM 305	Professional Communication
COMM 314	Nonverbal Communication
COMM 315W	Communication Between the Sexes
COMM 333	Persuasion
COMM 351	Interpersonal Communication in Organizations
COMM 355	Organizational Communication
COMM 368	Internship
COMM 395	Topics in Communication
COMM 400W	Intercultural Communication

COMM 412W	Interpersonal Communication Theory and Research
COMM 421	Communication and Conflict Management
COMM 447W	Electronic Media Law and Policy
COMM 448	Transnational Media Systems
COMM 456	Organizations and Social Influence
COMM 478	Principles of Media Marketing and Promotion
COMM 495	Topics in Communication

Total Hours 6

**Electives**

Elective courses may be taken for the remainder of the minimum 120 credits required for the degree.

**Upper Division General Education**

Met in the major

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major with no grade less than C- in major courses, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

**Bachelor of Science Degree–  
Interdisciplinary Studies Major–Work and  
Professional Studies Concentration**

[www.al.odu.edu/ids/wps/](http://www.al.odu.edu/ids/wps/)  
Daniel O’Leary, Program Coordinator and Advisor  
[doleary@odu.edu](mailto:doleary@odu.edu) ()

The work and professional studies interdisciplinary program is offered through the College of Arts and Letters at Old Dominion University and the higher education centers (Virginia Beach, Tri-Cities, and the Peninsula) using the Virtual Classroom technology. The program offers a 36-hour curriculum focused on the subject of work and labor and provides opportunities for students to integrate interdisciplinary theory and research findings with the application of problem-solving skills in the work environment. Courses are drawn from the disciplines of philosophy, English, sociology, history, psychology, economics, management and occupational and technical studies to examine the meaning and experience of work. Old Dominion University students admitted to the program have a variety of credit options including portfolio review, CLEP, DANTES and departmental exams. For more information about the work and professional studies interdisciplinary program, contact Daniel O’Leary at [doleary@odu.edu](mailto:doleary@odu.edu). Additional information, including application information, can be found at <http://www.odu.edu/al/wps/>.

**Lower Division General Education**

Written Communication *	6
Oral Communication	3
Mathematics	3
Language and Culture	0-6
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics **	0-3
The Nature of Science	8
Impact of Technology ***	0-3
Human Behavior	3
<b>Interdisciplinary Studies Core</b>	<b>6</b>

IDS 300W	Interdisciplinary Theory and Concepts ****	
IDS integration Project *****		
Select one from the following:		
IDS 368	Internship in Interdisciplinary Studies	
IDS 497	IDS Individualized Senior Project	
IDS 493	IDS Electronic Portfolio Project	
<b>Understanding Work and Labor</b> +		9
Select three from the following:		
ECON 407W	Labor Market Economics	
HIST 355	The United States, 1945-1991	
IDS 495	Topics in Integrative Studies (as approved)	
MGMT 325	Contemporary Organizations and Management	
MGMT 350	Employee Relations Problems and Practices	
MGMT 360	Labor Management Relations	
MGMT 451	Organizational Behavior	
PHIL 303E	Business Ethics	
PHIL 304	Marx and the Marxists	
PHIL 355	Computer Ethics	
PHIL 442E	Studies in Applied Ethics	
PHIL 495	Topics in Philosophy	
POLS 396/ COMM 395	Topics in Political Science (Internet Policy)	
SOC 395	Topics in Sociology (Perspectives on Organizational Behavior)	
SOC 415	Sociology of Work and Occupations	
SOC 495	Topics in Sociology (Sociology of Work, Family and Children)	
STEM 370T	Technology and Society	
WMST 390T	Women and Technology Worldwide	
<b>Applications</b>		9
Select three of the following:		
COMM 351	Interpersonal Communication in Organizations	
COMM 355	Organizational Communication	
COMM 421	Communication and Conflict Management	
ENGL 334W	Technical Writing	
ENGL 380	Reporting and News Writing I	
ENGL 381	Public Relations	
ENGL 435W	Management Writing	
ENGL 439	Writing in Digital Spaces	
FIN 411	Employee Benefit Planning	
IDS 495	Topics in Integrative Studies (as approved)	
MGMT 340	Human Resources Management	
PSYC 303	Industrial/Organizational Psychology	
PSYC 343	Personnel Psychology	
PSYC 344	Human Factors	
PSYC 345	Organizational Psychology	
SEPS 400	Instructional Systems Development	
SEPS 402	Instructional Methods in Occupational Studies	
SEPS 495	Topics in Occupational Education (Career Management Assessment and Planning)	
STEM 351	Communication Technology	
Additional hours elected from either Understanding Work and Labor or Applications		12
<b>Total Hours</b>		71-83

\* Grade of C or better required in both courses and in ENGL 110C and before declaring major.

- \*\* Can be met by PHIL 303E or PHIL 442E.
- \*\*\* Can be met by STEM 370T or WMST 390T.
- \*\*\*\* Grade of C or better required
- \*\*\*\*\* Senior standing and completion of IDS 300W are required for enrollment in IDS 368, IDS 493, or IDS 497.
- + Other courses related to the work and professional studies interdisciplinary program may be substituted with the approval of the program coordinator.

## Electives

Elective courses may be taken for the remainder of the minimum 120 credits required for the degree.

## Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses (6 hours). Any course listed as an elective choice for the major cannot be used to meet this option.

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## International Studies

Timothy Kidd, Director

To Be Named, Advisor  
[www.al.odu.edu/bais/](http://www.al.odu.edu/bais/)

## Bachelor of Arts—International Studies Major

The Bachelor of Arts in international studies (BAIS) is an interdisciplinary program that offers students a chance to explore the interrelations among nations and peoples and to study world affairs from a variety of perspectives. The BAIS major and minor center on studies in foreign languages and cultures, geography, history, and political science. Students have considerable flexibility to structure their academic programs to meet their particular needs and interests or to focus in a variety of geographical or topical fields.

## Lower Division General Education

Written Communication *	6
Oral Communication	3
Mathematics	3
Language and Culture (Satisfied in the major)	
Information Literacy and Research **	0-3
Human Creativity	3
Interpreting the Past ***	3
Literature	3
FLET 100L	Understanding World Literature (recommended)
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology	3
Human Behavior (satisfied in the major)	
<b>Foundation Courses</b> ****	

GEOG 100S or GEOG 250	Cultural Geography World Regional Geography	3
POLS 100S or POLS 102S	Introduction to International Politics Introduction to Comparative Government and Politics	3
ECON 201S	Principles of Macroeconomics	3
<b>Core Courses</b>		
<b>Foreign Language</b> <sup>+</sup>		18-21
<b>Methods Course Work</b>		3
Select one of the following:		
GEOG 308	Research Design	
HIST 201	Introduction to Historical Methods	
POLS 308	Research Design	
SOC 337	Introduction to Social Research	
WMST 470	Feminist Research Methods	
<b>Required Courses</b>		12
GEOG 305 or GEOG 320	World Resources Political Geography	
POLS 323 or POLS 324	International Political Economy International Relations Theory	
HIST 414 or HIST 415 or HIST 447	Freedom, Rights and Revolution: Evolution of the State System 1648-1815 Empire, Nations, and Industrialization: Evolution of the State System, 1815-1914 U.S. Foreign Relations, 1776-1914	
Senior Seminar <sup>****</sup>		
Select one of the following:		
FL 480W	Senior Seminar in International Studies	
GEOG 480W	Senior Seminar in International Studies	
HIST 480W	Senior Seminar in International Studies	
POLS 480W	Senior Seminar in International Studies	
Other approved course		
<b>Upper-Division Electives</b> <sup>++</sup>		
GEOG 300- or 400-level elective		3
HIST 300- or 400-level elective		3
POLS 300- or 400-level elective		3
300- or 400-level electives		6
Total Hours		92-98

- \* Grade of C or better required in both courses and in ENGL 110C before declaring major.
- \*\* Can be met with GEOG 308 or HIST 201 or POLS 308.
- \*\*\* Grade of C or better required; HIST 104H may not be used.
- \*\*\*\* Grade of C or better required.
- + A minimum of six credits in the same language beyond the 12 credit hours required for the Bachelor of Arts or demonstrated proficiency to that level as approved by the chair of the Department of Foreign Languages and Literatures. Only when the additional six credit hours (third year) are not available at Old Dominion University will a student be allowed to take these six hours in a different language. *Native speakers of languages other than English are not required to fulfill the language requirement upon presentation of a passing TOEFL score.*

- ++ 15 credit hours of 300- or 400-level approved electives. Three hours must be taken in a discipline other than geography, history or political science. Approved courses appear on the "Approved List of Courses for International Studies" available from the program director or at [www.al.odu.edu/bais/](http://www.al.odu.edu/bais/). Additional courses with an international focus may be approved by the program director. Up to six credits may be taken through participation in a model international organization (Model United Nations, Model Organization of American States or Model League of Arab States). Three hours of an approved practicum may count toward the major.

### Elective Credit

Elective credit will be needed to meet the minimum requirement of 120 credit hours.

### Study Abroad/International Experience

Study abroad or international experience is encouraged for international studies majors, and Old Dominion University credit is available for study abroad programs. The Office of Study Abroad offers information, advising services and scholarships for enrolled students.

### Upper Division General Education

- Option A. Approved Minor, 12-24 hours, 3 of which may be in the major area of study; also second degree or second major
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Arts and Humanities Component within the College of Arts and Letters that are not required by the major (6 hours). IS courses and any course listed as an elective choice for the major cannot be used to meet this option.

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Bachelor of Arts with Honors— International Studies Major

Students may earn honors in the major by fulfilling all the degree requirements and meeting the honors requirements indicated below. The requirements for honors do not increase the credit hours necessary for the major. The requirements are as follows:

1. Attain an overall grade point average of 3.25.
2. Attain a grade point average in the major of 3.5.
3. Earn honors in nine hours of courses in the major at the 300/400 level, with no more than six hours taken from the same instructor.

## Minor in International Studies

The minor in international studies requires 15 credit hours including:

1. GEOG 100S or POLS 100S or POLS 102S is a prerequisite course for the minor and is not included in the calculation of the grade point average for the minor.
2. Twelve hours of upper-division approved electives to include:

GEOG 300-400 level elective	3
HIST 300-400 level elective	3
POLS 300-400 level elective	3
300-400 level elective	3

Approved courses appear on the "Approved List of Courses for International Studies" available from the program director or at <http://al.odu.edu/bais/>.

Additional courses with an international focus may be approved by the program director. Up to three credits may be taken through participation in a model international organization (Model United Nations, Model Organization of American States or Model League of Arab States). Courses taken to fulfill requirements for the major discipline may not be applied toward the minor.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Five-Year B.A./M.A. Program in International Studies

Qualified students can apply for admission to the five-year accelerated B.A./M.A. graduate degree program in international studies.

### Requirements for Admission

Requirements for admission are:

1. A declared major in the B.A. program in international studies (BAIS).
2. A minimum of 60 hours completed, including at least six hours of 300/400 courses in the major.
3. A minimum GPA of 3.5 at the time of application.
4. Application to the accelerated B.A./M.A. program in international studies, approved by both the B.A. and M.A. directors.
5. Take the GRE during the last semester of BAIS work with an expected minimum score of 1100 (verbal and quantitative totals).
6. Complete an application form for Old Dominion University graduate admission. Students specializing in a region (e.g. Asia, Latin America, etc.) are encouraged to complete a minor at the undergraduate level.

Students pursuing the accelerated B.A./M.A. program will fulfill all lower-level General Education requirements that have been approved for the BAIS and meet the requirements to earn a B.A. in international studies.

#### Method Courses

3

Select one of the following courses:

GEOG 308	Research Design
POLS 308	Research Design
HIST 201	Introduction to Historical Methods
SOC 337	Introduction to Social Research
WMST 470	Feminist Research Methods

#### Foreign Language \*

18-21

#### Core Courses in Geography, History, Political Science, and Cultural Studies

21

Five of the following six courses are required:

GEOG 305	World Resources
GEOG 320	Political Geography
HIST 414	Freedom, Rights and Revolution: Evolution of the State System 1648-1815
or HIST 415	Empire, Nations, and Industrialization: Evolution of the State System, 1815-1914
POLS 323	International Political Economy
POLS 324	International Relations Theory

Cultural Studies: \*\*

BAIS Senior Seminar

Select one of the following:

FL 480W	Senior Seminar in International Studies
GEOG 480W	Senior Seminar in International Studies
HIST 480W	Senior Seminar in International Studies
POLS 480W	Senior Seminar in International Studies

Other approved course

#### Bridge Courses (to be taken during Senior Year) \*\*\*

12

IS 600	Research Methods in International Studies
IS 601	Seminar in International Relations Theory
IS 606	American Foreign Policy and World Order
ECON 650	International Economics

\* A minimum of six credits beyond the requirement for the Bachelor of Arts (preferably in the language pursued for the B.A.) or demonstrated proficiency to that level as approved by the chair of the Department of Foreign Languages and Literatures. Current language offerings include: Arabic, Chinese, French, German, Hebrew, Italian, Japanese, Latin, Russian, and Spanish. Native speakers of a language other than English may ask for a waiver. To be considered a native speaker, a student must be admitted to Old Dominion University with a passing TOEFL score.

\*\* Students select one course that links culture to other aspects of international studies in an integrative, interdisciplinary way. Examples are Foreign Languages in English Translation (FLET) literature and film courses, English World Literature courses, and other culturally focused, international, interdisciplinary courses, and those from disciplines other than GEOG, HIST, and POLS as available and approved by the BAIS director.

\*\*\* An overall GPA of at least 3.00 is required in these courses.

The B.A. in international studies will be awarded on completion of 120 credit hours including all the preceding courses and other University requirements for graduation.

### Master of Arts Requirements

After obtaining the B.A. in international studies, students must complete the following:

1. Four graduate courses in one of the following fields of concentration (instead of the three required for M.A. students): international relations/ U.S. foreign policy; conflict and cooperation; international political economy and development; and interdependence and transnationalism.
2. Two electives at the 600 level or above. At least one should have a regional focus (e.g. Europe, Asia, Middle East, Latin America).

The M.A. in international studies requires 18 credits beyond the four Bridge Courses (the MAIS core courses). It is anticipated that a student who has completed the BAIS could thus take three courses in the fall and spring semesters. There will be no thesis option.

### Additional Requirements

Students in the accelerated B.A./M.A. program must also complete the following:

1. Fulfill the BAIS language requirement (which also fulfills MAIS requirements).
2. Take the GRE during the last semester of BAIS work with a minimum expected score of 1100 (verbal and quantitative totals).
3. Have an overall GPA of 3.00 in the seven core undergraduate courses and at least a GPA of 3.00 in the four Bridge courses (MAIS core courses).
4. Maintain an overall GPA of 3.00. (Students failing to maintain a 3.00 GPA may revert to the regular BAIS degree and count up to 12 hours of completed graduate core courses toward the BAIS.)
5. Complete an application form for Old Dominion University graduate admission. Students specializing in a region (e.g. Asia, Latin America, etc.) are encouraged to complete a minor at the undergraduate level.

### Additional Explanations

1. Students interested in the B.A./M.A. program will be advised as early as possible, and admitted students will start the program during their Junior year in order to meet all the requirements. Thus, students may apply for admission to the accelerated program after they have earned 60 credits (including at least six hours of 300/400 courses in the major). Applications can be filed with the undergraduate director on

or before April 1 for admission in the following Fall semester and on or before November 1 for admission in the following Spring semester. Notifications of acceptance to students will be forwarded by May 1 and December 1, respectively.

- Students fulfill the BAIS language requirement (which also fulfills MAIS requirements).
- Students will receive the B.A. degree after fulfilling all the requirements for the undergraduate degree. Students whose overall GPA drops below a 3.00 before attaining the B.A. degree can revert to the regular BAIS program and count any graduate credits they may have earned toward the BAIS. Students with a GPA of less than 3.00 at the end of their fourth year will not be permitted to continue toward the M.A. degree.
- Students in the accelerated program must meet the BAIS requirement that students must receive a minimum grade of C (2.00) in the following undergraduate courses:
 

ENGL 110C	English Composition	3
ENGL 211C	English Composition	3
GEOG 100S	Cultural Geography	3
POLS 100S	Introduction to International Politics	3
or POLS 102S	Introduction to Comparative Government and Politics	
ECON 201S	Principles of Macroeconomics	3
Select one of the following:		3
HIST 100H	Interpreting the World Past Since 1500	
HIST 101H	Interpreting the Asian Past	
HIST 102H	Interpreting the European Past	
HIST 103H	Interpreting the Latin America Past	
HIST 105H	Interpreting the African Past	
Not accepted for the major:		
HIST 104H	Interpreting the American Past	
- Please refer to the Graduate Catalog for additional information on the M.A. in international studies as well as the doctoral program in international studies.

## Music

John Toomey, Chair  
 Agnes Fuller-Wynne, Chief Departmental Advisor  
 Nancy K. Klein, Graduate Program Director  
[www.al.odu.edu/music/](http://www.al.odu.edu/music/)

The Department of Music is a fully accredited member of NASM, and offers applied music instruction and course work leading to the following degrees:

- Bachelor of Music with a major in performance (options in voice, piano, organ, harpsichord, orchestral instruments, and guitar);
- the Bachelor of Music with a major in composition;
- the Bachelor of Music with a major in music industry;
- the Bachelor of Arts with a major in music; and
- the Bachelor of Music in Music Education (options in vocal or instrumental music).

For admittance to the department, students must take a theory and aural skills placement exam, and perform an audition.

In addition to the work offered for degree students in music, there are available to non-music majors a minor in music (emphasis in composition, performance, or music history) and courses in the appreciation, history, methods, and literature of music; participation in the concert band, orchestra, choir, and other ensembles; and individual instruction in piano, organ, voice, guitar, harpsichord, and the orchestral and band instruments.

The Department of Music offers a Master of Music Education (MME). Please refer to the Graduate Catalog for more information (<http://catalog.odu.edu/graduate>).

## Bachelor of Music—Composition Major

Andrey Kasparov, Program Advisor

### Lower Division General Education

Written Communication *	6
Oral Communication (satisfied in the major)	
Mathematics	3
Language and Culture (see departmental requirements)	0-6
Information Literacy and Research	3
Human Creativity	3
Select one of the following:	
ARTH 121A	Introduction to the Visual Arts
ARTS 122A	Visual Communication
COMM/THEA 270A	Film Appreciation
DANC 185A	Dance and Its Audience
THEA 241A	The Theatre Experience
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology **	
Human Behavior	3
<b>Total Hours</b>	<b>35-41</b>

\* Grade of C or better required in both courses and in ENGL 110C before declaring major

\*\* Satisfied in the major with MUSC 335T

### Departmental Requirements

MUSC 221	Music Theory (I) *	3
MUSC 222	Music Theory (II) *	3
MUSC 223	Ear Training, Sight Singing and Dictation *	1
MUSC 224	Ear Training, Sight Singing and Dictation *	1
MUSC 261	Music Literature Survey (I) **	1
MUSC 262	Music Literature Survey (II) **	1
MUSC 309	Principles of Conducting	1
MUSC 321	Advanced Theory (I) *	2
MUSC 322	Advanced Theory (II) **	2
MUSC 323	Advanced Ear Training, Sight Singing and Dictation *	1
MUSC 324	Advanced Ear Training, Sight Singing and Dictation **	1
MUSC 335T	Music Production: MIDI I (satisfies impact of technology requirement)	3
MUSC 336	Electronic Music	3
MUSC 361	History of Music **	3
MUSC 362W	History of Music (must obtain a grade of C or better)	3
MUSC 414	Advanced Instrumental Conducting	2
MUSC 421	Counterpoint	2
MUSC 422	Form and Analysis	2
MUSC 424	Orchestration	2
MUSC 466	Modern Music	3
MUSA 232	Hour Lesson - Applied Composition	3
MUSA 331	Hour Lesson - Applied Composition	3
MUSA 332	Hour Lesson - Applied Composition	3

MUSA 431	Hour Lesson - Applied Composition	3
MUSA 432	Hour Lesson - Applied Composition	3
Select two Music History Electives from the following:		6
MUSC 460	History of Jazz	
MUSC 491	Music in the Baroque Era	
MUSC 492	Music in the Classical Era	
MUSC 494	Music in the Romantic Era	
Large Ensemble ***		3
Small Ensemble ****		2
MUSC 101	Beginning Piano Class	1
MUSC 102	Beginning Piano Class	1
MUSA 139	Half-Hour Lesson (Piano)	1
MUSA 140	Half-Hour Lesson (Piano)	1
MUSA 141	Hour Lesson	2
MUSA 142	Hour Lesson	2
MUSA 241	Hour Lesson	2
MUSA 242	Hour Lesson	2
Piano Proficiency +		0
Recital Attendance (Blue Card Requirements) ++		
Total Hours		78

**Elective credit may be needed to meet the minimum of 120 credits required for the degree.**

- \* Students must earn a C or better in these courses.
- \*\* Students must earn a grade of C- or better in these courses.
- \*\*\* Students are required to earn credits through participating in ensembles appropriate to their specialties. Large ensembles include: symphony band, wind ensemble, symphony orchestra, concert choir, and guitar ensemble.
- \*\*\*\* Madrigal Singers, Collegium Musicum, opera workshop, jazz choir, and jazz, brass, percussion, guitar, string, woodwind, or piano ensemble.
- + Each student in composition will be required to pass a piano proficiency exam before being allowed to enroll as a composition major. Failure to pass the piano proficiency exam will require students to study piano privately until they are able to complete the requirement.
- ++ PLEASE NOTE: All composition majors are required to attend 60 Blue Card events in order to be eligible for graduation. These department-approved events are posted each semester. Eight of the 60 Blue Cards required for graduation must be Diehn Series concerts. Students may not graduate without fulfilling this requirement. It is strongly recommended that a student attend a minimum of two Diehn concerts per year to meet this goal.

Composition majors are required to present a lecture-recital containing 30 minutes of original music.

French, German, or Italian is strongly recommended to fulfill the General Education Language and Culture requirement.

### Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major.
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study.
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Social Science Component within the College of Arts and Letters that are not required by the major (6 hours).

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must

include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Bachelor of Music—Performance Major

Mike Hall, Program Advisor

### Lower Division General Education

Written Communication *		6
Oral Communication		3
Mathematics		3
Language and Culture (Voice concentration, see additional requirements)		0-6
Information Literacy and Research		3
Human Creativity		3
Select one of the following:		
ARTH 121A	Introduction to the Visual Arts	
ARTS 122A	Visual Communication	
COMM/THEA 270A	Film Appreciation	
DANC 185A	Dance and Its Audience	
THEA 241A	The Theatre Experience	
Interpreting the Past		3
Literature		3
Philosophy and Ethics		3
The Nature of Science		8
Impact of Technology **		
Human Behavior		3
Total Hours		38-44

\* Grade of C or better required in both courses and in ENGL 110C before declaring major

\*\* Satisfied in the major with MUSC 335T

### Departmental Requirements

MUSC 221	Music Theory (I) *	3
MUSC 222	Music Theory (II) *	3
MUSC 223	Ear Training, Sight Singing and Dictation *	1
MUSC 224	Ear Training, Sight Singing and Dictation *	1
MUSC 261	Music Literature Survey (I) **	1
MUSC 262	Music Literature Survey (II) **	1
MUSC 309	Principles of Conducting	1
MUSC 321	Advanced Theory (I) *	2
MUSC 322	Advanced Theory (II) **	2
MUSC 323	Advanced Ear Training, Sight Singing and Dictation *	1
MUSC 324	Advanced Ear Training, Sight Singing and Dictation **	1
MUSC 335T	Music Production: MIDI I (satisfies impact of technology requirement)	3
MUSC 361	History of Music **	3
MUSC 362W	History of Music (must obtain a grade of C or better)	3
MUSC 413 or MUSC 414	Advanced Choral Conducting or Advanced Instrumental Conducting	2
MUSC 421	Counterpoint	2
MUSC 422	Form and Analysis	2

MUSC 445	Applied Music Pedagogy	1
MUSC 446	Applied Music Literature	1
24 credit hours must be taken in the instrument of concentration including the following 6 credits:		
MUSA 451	Hour Lesson	
MUSA 452	Hour Lesson	
Recital Attendance (Blue Card Requirements)		
Total Hours		34

\* Students must earn a C or better in these courses to advance to the next level.

\*\* Students must earn a grade of C- or better in these courses.

Successful completion of a half-hour 200-level recital and a full-hour 400-level recital is also required. Vocal students will complete their half hour recital in the MUSA 351 semester.

**Students must select one of the following concentrations:**

### Orchestral Instruments Concentration

MUSA 151-352 Applied Lessons		18
MUSA 451	Hour Lesson	3
MUSA 452	Hour Lesson	3
MUSC 101	Beginning Piano Class	1
MUSC 102	Beginning Piano Class	1
MUSA 139	Half-Hour Lesson (Piano )	1
MUSA 140	Half-Hour Lesson (Piano )	1
MUSC 424	Orchestration	2
Select three Music History elective courses from the following:		
MUSC 460	History of Jazz	
MUSC 466	Modern Music	
MUSC 491	Music in the Baroque Era	
MUSC 492	Music in the Classical Era	
MUSC 494	Music in the Romantic Era	
MUSC Band or Orchestra		4
Small Instrumental Ensemble <sup>+</sup>		4
Total Hours		47

### Voice Concentration

101F-102F Foreign Language <sup>*</sup>		6
MUSA 151-352 Applied Lessons		18
MUSA 451	Hour Lesson	3
MUSA 452	Hour Lesson	3
MUSC 101	Beginning Piano Class	1
MUSC 102	Beginning Piano Class	1
MUSA 139	Half-Hour Lesson (Piano )	1
MUSA 140	Half-Hour Lesson (Piano )	1
MUSA 239	Half-Hour Lesson (Piano )	1
MUSA 240	Half-Hour Lesson (Piano )	1
Select two Music History elective courses from the following:		
MUSC 460	History of Jazz	
MUSC 466	Modern Music	
MUSC 491	Music in the Baroque Era	
MUSC 492	Music in the Classical Era	
MUSC 494	Music in the Romantic Era	
MUSC 345	Diction for Singers	1
MUSC 346	Diction for Singers	1
Piano Proficiency Exam		0
Concert Choir		4
Opera Workshop		1

Small Vocal Ensemble <sup>+</sup>	3
Total Hours	52

### Piano, Organ, Harpsichord, or Guitar Concentration

MUSA 151-352 Applied Lessons		18
MUSA 451	Hour Lesson	3
MUSA 452	Hour Lesson	3
Select three Music History Electives from the following:		
MUSC 460	History of Jazz	
MUSC 466	Modern Music	
MUSC 491	Music in the Baroque Era	
MUSC 492	Music in the Classical Era	
MUSC 494	Music in the Romantic Era	
MUSC 424	Orchestration	2
Ensemble <sup>+</sup>		6-8
Recital Attendance (Blue Card Requirements) <sup>++</sup>		
Total Hours		41-43

\* Foreign Language other than that used to satisfy lower division General Education (French, German or Italian strongly recommended).

<sup>+</sup> Students are required to earn credits through participating in ensembles appropriate to their specialties. Instrumental and voice majors will be required to participate in four semesters of large ensemble and four semesters of small ensemble. Keyboard majors will have a six semester requirement, of which two must be in large ensemble and two in small ensemble. Large ensembles include: symphony band, wind ensemble, symphony orchestra, concert choir and guitar ensemble. Small ensembles include: Madrigal Singers, Collegium Musicum, opera workshop, jazz choir and jazz, brass, percussion, guitar, string, woodwind, or piano ensemble.

<sup>++</sup> PLEASE NOTE: All music performance majors are required to attend 60 Blue Card events in order to be eligible for graduation. These department-approved events are posted each semester. Eight of the 60 Blue Cards required for graduation must be Diehn Series concerts. Students may not graduate without fulfilling this requirement. It is strongly recommended that a student attend a minimum of two Diehn concerts per year to meet this goal.

### Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Social Science Component within the College of Arts and Letters that are not required by the major (6 hours).

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120-130 credit hours depending on the concentration, which must include both a minimum of 30-33 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

### Bachelor of Music—Music Industry Major

Louis Steven Latham, Program Advisor

## Lower Division General Education

Written Communication *	6
Oral Communication	3
Mathematics	3
Language and Culture (see departmental requirements)	0-6
Information Literacy and Research	3
Human Creativity (select one of the following)	3
ARTH 121A Introduction to the Visual Arts	
ARTS 122A Visual Communication	
COMM 270A Film Appreciation	
or THEA 270A Film Appreciation	
DANC 185A Dance and Its Audience	
THEA 241A The Theatre Experience	
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology **	
Human Behavior***	
ECON 202S Principles of Microeconomics	
<b>Total Hours</b>	<b>35-41</b>

\* Grade of C or better required in both courses and in ENGL 110C before declaring major

\*\* Satisfied in the major with MUSC 335T

\*\*\* Satisfied in the major with ECON 202S

## Departmental Requirements

MUSC 101	Beginning Piano Class	1
MUSC 102	Beginning Piano Class	1
MUSC 221	Music Theory (I) *	3
MUSC 222	Music Theory (II) *	3
MUSC 223	Ear Training, Sight Singing and Dictation *	1
MUSC 224	Ear Training, Sight Singing and Dictation *	1
MUSC 261	Music Literature Survey (I) **	1
MUSC 262	Music Literature Survey (II) **	1
MUSC 321	Advanced Theory (I) *	2
MUSC 322	Advanced Theory (II) **	2
MUSC 323	Advanced Ear Training, Sight Singing and Dictation *	1
MUSC 324	Advanced Ear Training, Sight Singing and Dictation **	1
MUSC 361	History of Music **	3
MUSC 362W	History of Music (must obtain a grade C or better)	3

### Performance Requirements

MUSA 141	Hour Lesson	2
MUSA 142	Hour Lesson	2
MUSA 241	Hour Lesson	2
MUSA 242	Hour Lesson	2
Large or Small Ensemble		4

### Music Industry Requirements

MUSC 113	Music Industry: Live Audio Engineering	3
MUSC 115	Introduction to Pro Tools	3
MUSC 116	Essentials of Pro Tools	3
MUSC 215	ProTools Production	3
MUSC 216	Music Production Techniques	3

MUSC 269	Music Industry: Practicum	1
MUSC 333	Music Business	3
MUSC 335T	Music Production: MIDI I	3
MUSC 336	Electronic Music	3
MUSC 368	Music Industry Internship	3
ACCT 201	Principles of Financial Accounting	3
ECON 202S	Principles of Microeconomics	3
MGMT 325	Contemporary Organizations and Management	3
COMM 441	The Music Industry and Communication	3
Music Industry Elective (select one of the following)		3
MUSC 316	Popular Songwriting Techniques	
MUSC 350	Music Notation	
MUSC 425	Vocal Arranging	
MUSC 435	Music Production: MIDI II	
COMM 364	Radio	
MGMT 426	Entrepreneurship: New Ventures Creation	
Or other approved 300/400 level course		
Recital Attendance (Blue Card Requirements) ***		
<b>Total Hours</b>		<b>79</b>

\* Students must earn a C or better in these courses.

\*\* Students must earn a grade of C- or better in these courses.

\*\*\* PLEASE NOTE: All majors are required to attend 60 Blue Card events in order to be eligible for graduation. These department-approved events are posted each semester. Eight of the 60 Blue Cards required for graduation must be Diehn Series concerts. Students may not graduate without fulfilling this requirement. It is strongly recommended that a student attend a minimum of two Diehn concerts per year to meet this goal.

## Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major.
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study.
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Social Science Component within the College of Arts and Letters that are not required by the major (6 hours).

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Bachelor of Arts—Music Major

James Kosnik, Program Advisor

### Lower Division General Education

Written Communication *	6
Oral Communication	3
Mathematics	3
Language and Culture **	0-12
Information Literacy and Research	3
Select one of the following Human Creativity courses:	3
ARTH 121A Introduction to the Visual Arts	
ARTS 122A Visual Communication	



COMM/THEA 270A	Film Appreciation	
DANC 185A	Dance and Its Audience	
THEA 241A	The Theatre Experience	
Interpreting the Past		3
Literature		3
Philosophy and Ethics		3
The Nature of Science		8
Impact of Technology ***		
Human Behavior		3
Total Hours		38-50

\* Grade of C required in both courses and in ENGL 110C before declaring major

\*\* Proficiency in French or German through the 202 level preferred; proficiency is not met by completion of an associate degree.

\*\*\* Satisfied in the major with MUSC 335T

### Departmental Requirements

MUSC 221	Music Theory (I) *	3
MUSC 222	Music Theory (II) *	3
MUSC 223	Ear Training, Sight Singing and Dictation *	1
MUSC 224	Ear Training, Sight Singing and Dictation *	1
MUSC 261	Music Literature Survey (I) **	1
MUSC 262	Music Literature Survey (II) **	1
MUSC 309	Principles of Conducting	1
MUSC 321	Advanced Theory (I) *	2
MUSC 322	Advanced Theory (I) **	2
MUSC 323	Advanced Ear Training, Sight Singing and Dictation *	1
MUSC 324	Advanced Ear Training, Sight Singing and Dictation **	1
MUSC 335T	Music Production: MIDI I (meets impact of technology requirement)	3
MUSC 361	History of Music **	3
MUSC 362W	History of Music (must obtain a grade of C or better)	3
Ensemble ***		2
Applied Music (student must perform on an SPH in the final semester of applied)		4
Music Elective		1
Elective		1
Recital Attendance (Blue Card Requirements)		
Total Hours		34

\* Students must earn a grade of C or better in these courses to advance to the next level.

\*\* Students must earn a grade of C- or better in these courses.

\*\*\* Students are required to earn credits through participating in ensembles appropriate to their specialties. Instrumental and voice and keyboard majors will be required to participate in two ensembles, large or small. Additional credits for participation in ensembles can be used as elective credit.  
Large ensembles include: symphony band, wind ensemble, symphony orchestra, concert choir and guitar ensemble.  
Small ensembles include: Madrigal Singers, Collegium Musicum, opera workshop, jazz choir and jazz, brass, percussion, guitar, string, woodwind, or piano ensemble.

### Students in the B.A. in music program may choose from the following upper-level (300-400) music courses (18 hours required) or may choose an emphasis area

MUSC 336	Electronic Music	3
MUSC 337	Jazz Improvisation I	2
MUSC 338	Jazz Improvisation II	2
MUSC 410	Psychology of Music	3
MUSC 413	Advanced Choral Conducting	2
MUSC 414	Advanced Instrumental Conducting	2
MUSC 421	Counterpoint	2
MUSC 422	Form and Analysis	2
MUSC 424	Orchestration	2
MUSC 460	History of Jazz	3
MUSC 466	Modern Music	3
MUSC 491	Music in the Baroque Era	3
MUSC 492	Music in the Classical Era	3
MUSC 494	Music in the Romantic Era	3

### Music History Emphasis Area

MUSC 460	History of Jazz	3
MUSC 466	Modern Music	3
MUSC 491	Music in the Baroque Era	3
MUSC 492	Music in the Classical Era	3
MUSC 494	Music in the Romantic Era	3
Music Elective (upper level) *		3
Total Hours		18

### Music Theory Emphasis Area

MUSC 335T	Music Production: MIDI I	3
MUSC 337	Jazz Improvisation I	2
MUSC 421	Counterpoint	2
MUSC 422	Form and Analysis	2
MUSC 424	Orchestration	2
MUSC 466	Modern Music	3
Music Elective (upper level) *		4
Total Hours		18

### Jazz Emphasis Area

MUSC 335T	Music Production: MIDI I	3
MUSC 336	Electronic Music	3
MUSC 337	Jazz Improvisation I	2
MUSC 338	Jazz Improvisation II	2
Select two of the following:		2
MUSC 370	Jazz Combo	
MUSC 382+	Wind Ensemble	
MUSC 384+	Jazz Ensemble	
MUSC 460	History of Jazz	3
Music Elective (upper level) *		3
Recital Attendance (Blue Card Requirements) **		
Total Hours		18

300 level French or German courses are recommended to fulfill remaining credit hour requirements.

\* Students may choose an ensemble or applied music as an elective in the emphasis areas.

\*\* PLEASE NOTE: All Bachelor of Arts music majors are required to attend 60 Blue Card events in order to be eligible for graduation. These department-approved events are posted each semester. Eight of the 60 Blue Cards required for graduation must be Diehn Series concerts. Students may not graduate without fulfilling this requirement. It is strongly recommended that a student attend a minimum of two Diehn concerts per year to meet this goal.

## Elective Credit

Elective credit will be needed to meet the minimum requirement of 120 credit hours.

## Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Social Science Component within the College of Arts and Letters that are not required by the major (6 hours).

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) in the major course with a grade of C or better, and completion of Senior Assessment.

## Bachelor of Music—Music Education Major

Douglas T. Owens, Program Advisor

## Lower Division General Education

Written Communication *	6
Oral Communication (satisfied in the major)	
Mathematics	3
Language and Culture	0-6
Information Literacy and Research	3
Select one of the following Human Creativity courses:	3
ARTH 121A Introduction to the Visual Arts	
ARTS 122A Visual Communication	
COMM/THEA 270A Film Appreciation	
DANC 185A Dance and Its Audience	
THEA 241A The Theatre Experience	
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology **	
Human Behavior	3
<b>Total Hours</b>	<b>35-41</b>

\* Grade of C or better required in both courses and in ENGL 110C before declaring major

\*\* Satisfied in the major with MUSC 335T

## Departmental Requirements

MUSC 221	Music Theory (I) *	3
MUSC 222	Music Theory (II) *	3

MUSC 223	Ear Training, Sight Singing and Dictation *	1
MUSC 224	Ear Training, Sight Singing and Dictation *	1
MUSC 261	Music Literature Survey (I) **	1
MUSC 262	Music Literature Survey (II) **	1
MUSC 309	Principles of Conducting	1
MUSC 321	Advanced Theory (I) *	2
MUSC 322	Advanced Theory (II) **	2
MUSC 323	Advanced Ear Training, Sight Singing and Dictation *	1
MUSC 324	Advanced Ear Training, Sight Singing and Dictation **	1
MUSC 335T	Music Production: MIDI I (satisfies impact of technology requirement)	3
MUSC 361	History of Music **	3
MUSC 362W	History of Music (must obtain a grade of C or better)	3
<b>Total Hours</b>		<b>26</b>

\* Students must earn a grade of C or better in these courses to advance to the next level.

\*\* Students must earn a grade of C- or better in these courses.

**Students must select one of the following concentrations:**

## Instrumental Concentration

MUSC 101	Beginning Piano Class (I)	1
MUSC 102	Beginning Piano Class (II)	1
MUSC 107	Beginning Voice Class (I)	1
MUSC 301	Music Education: High Brass Class (Trumpet)	1
MUSC 302	Music Education: Low Brass Class	1
MUSC 303	Music Education: Clarinet Class	1
MUSC 304	Music Education: Woodwind Class	1
MUSC 305	Music Education: Upper Strings Class	1
MUSC 306	Music Education: Lower Strings Class	1
MUSC 307	Music Education: Percussion Class	1
MUSC 414	Advanced Instrumental Conducting	2
MUSC 426	Marching Band Techniques and Arranging (woodwind, brass and percussion. String students should take MUSC 424 Orchestration)	2
Small Instrumental Ensemble (two semesters)		2
Large Instrumental Ensemble (five semesters) *		5
Applied Music Primary Performance Area - MUSA 141-441 **		14
Completion of half-hour senior recital required		
<b>Total Hours</b>		<b>35</b>

\* Woodwind, brass, and percussion majors must elect band as their large ensemble; string majors must elect orchestra. In addition, woodwind, brass and percussion majors are required to complete one semester of Marching Band, MUSC 390 (counted toward small ensemble credit).

\*\* At least two credits must be at the 400-level.

## Voice, Keyboard or Guitar Concentration (Guitarists must select all courses in the Voice or Guitar Emphasis and the Keyboard or Guitar Emphasis, listed below)

MUSC 345	Diction for Singers (I)	1
MUSC 346	Diction for Singers (II)	1

MUSC 409	Music Education: Instrumental Techniques	1
MUSC 413	Advanced Choral Conducting	2
MUSC 425	Vocal Arranging (if not offered, 424 or 426 can be substituted)	2
Applied Music Requirement - MUSA 141-441 *		14
<b>Ensemble</b>		
Concert Choir (five semesters)		5
Small Vocal Ensemble (2 semesters) **		2
Total Hours		28

\* Fourteen credit hours of the primary performance area, at least two of which must be at the 400-level, are required. Successful completion of a half-hour recital.

\*\* Guitarists may choose guitar ensembles in lieu of small vocal ensemble.

### Voice or Guitar Emphasis

MUSC 101	Beginning Piano Class (I)	1
MUSC 102	Beginning Piano Class (II)	1
MUSA 139	Half-Hour Lesson (Piano)	1
MUSA 140	Half-Hour Lesson (Piano)	1
MUSA 239	Half-Hour Lesson (Piano)	1
MUSA 240	Half-Hour Lesson (Piano)	1
Piano Proficiency exam and Voice Proficiency exam required		
Total Hours		6

### Keyboard or Guitar Emphasis

MUSC 107	Beginning Voice Class (I)	1
MUSA 139	Half-Hour Lesson (Voice)	1
MUSA 140	Half-Hour Lesson (Voice)	1
MUSA 239	Half-Hour Lesson (Voice)	1
MUSA 240	Half-Hour Lesson (Voice)	1
MUSA 240	Half-Hour Lesson (Voice)	1
Piano and Voice Proficiency exam required		
Recital Attendance (Blue Card Requirement) *		
Total Hours		6

\* PLEASE NOTE: All Bachelor of Music Education majors are required to attend 50 Blue Card events in order to be eligible for graduation. These department-approved events are posted each semester. Eight of the 50 Blue Cards required for graduation must be Diehn Series concerts. Students may not graduate without fulfilling this requirement. It is strongly recommended that a student attend a minimum of two Diehn concerts per year to meet this goal.

## License in Music Education

### Admission

All students must apply for and be admitted into the approved music education program. Students must meet the required criteria for admission by passing the Virginia Board of Education prescribed assessments and earn the minimum required grade point averages (GPA).

### Prescribed Virginia Board of Education Assessment for Admission to an Approved Teacher Education Program

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program. This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

1. Passing PRAXIS I composite score of 532 by December 31, 2013; or
2. Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014;

Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; or

3. Approved substitute test scores:
  - a. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  - b. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
  - c. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
  - d. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
  - e. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
  - f. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
  - g. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
  - h. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
  - i. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**
  - j. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.

*Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

### Required grade point averages (GPA)

- A cumulative GPA of 2.75 is required.
- A major/content GPA of 2.75 is required – A grade of C or better is required in MUSC 362W. All other Music courses must be passed with a grade of C- or higher.
- A professional education GPA of 2.75 is required – All professional education courses must be passed with a grade of C- or higher.

Although students may enroll in a limited number of education courses, students must be admitted into the approved music education program prior to enrolling in any instructional strategies practicum education course. Students must also meet with an education advisor in the Office of Teacher Education Services.

### Continuance

Students must maintain a cumulative GPA of 2.75, a major/content GPA of 2.75 and a professional education GPA of 2.75. A grade of C or better is required in MUSC 362W; all other music courses must be passed with a grade of C- or higher. The remaining courses required for the major and in the professional education core must be completed with a grade of C- or higher for continuance. A professional education GPA of 2.75 is required for continuance. Students must take and pass the Virginia Communication and Literacy Assessment (VCLA) and the PRAXIS II Music content knowledge examination prior to or while enrolled in the secondary music education practicum course. All assessments must be passed prior to the start of the Teacher Candidate Internship Orientation session.

### Virginia Board of Education prescribed assessments:

- **Virginia Communication and Literacy Assessment (VCLA)** – a passing composite score of 470 is required on this reading and writing assessment.
- **PRAXIS II Music: Content Knowledge (test code 5113- computer version)** – passing score of 160 is required for MUSC 404 or MUSC 408

To review more information on the Virginia Board of Education prescribed assessments, visit the Teacher Education Services website, [www.odu.edu/tes](http://www.odu.edu/tes).

## Graduation

Requirements for graduation include completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better; completion of the Senior Assessment; a minimum cumulative 2.75 GPA in the major area and in the professional education core with no grade less than a C- in the major/content and the professional education core; successful completion of the Teacher Candidate Internship, and a minimum of 128 credit hours, which must include both a minimum of 32 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University.

Due to changing University requirements, national accreditation standards, and the Virginia Board of Education licensure regulations, the teacher education programs in the College of Arts and Letters are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students are encouraged to obtain current program information from their advisors and from the Teacher Education Services website at [www.odu.edu/tes](http://www.odu.edu/tes).

The voice concentration requires passage of a voice proficiency examination and a piano proficiency examination before a student is eligible for Teacher Candidate Internship.

## The professional education core courses and requirements are as follows:

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 485	Teacher Candidate Internship	12
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
<b>Total Hours</b>		<b>26</b>

### Vocal, Keyboard, or Guitar

MUSC 401	Music Education: Elementary Vocal and General Methods	2
MUSC 402	Music Education: Practicum (Elementary Vocal and General)	1
MUSC 403	Music Education: Secondary Vocal Methods	2
MUSC 404	Music Education: Practicum (Secondary Vocal) *	1
<b>Total Hours</b>		<b>6</b>

### OR Instrumental

MUSC 401	Music Education: Elementary Vocal and General Methods	2
MUSC 402	Music Education: Practicum (Elementary Vocal and General)	1
MUSC 407	Music Education: Secondary Instrumental Methods	2
MUSC 408	Music Education: Practicum (Secondary Instrumental) *	1
<b>Total Hours</b>		<b>6</b>

\* Passing score of 160-PRAXIS II Music Content Knowledge required for MUSC 404

\* Passing score of 160-PRAXIS II Music Content Knowledge required for MUSC 408

## Upper Level General Education

Satisfied through the professional education sequence.

## Dual Certification–Fifth Year Program

It is possible to receive dual certification (in both instrumental and vocal music education) by completing an additional year of study. The additional course requirements are listed below. The student teaching experience in this program will be a half semester of vocal teaching and a half semester of instrumental teaching. Students interested in dual certification should be advised by the department's music education specialist as early in their degree program as possible.

### Instrumental

For those students who have begun the program with an instrumental concentration (as described above) and need to add the vocal component of the five-year program, the following additional courses are required:

MUSA 139	Half-Hour Lesson (Piano)	1
MUSA 140	Half-Hour Lesson (Piano)	1
MUSA 239	Half-Hour Lesson (Piano)	1
MUSA 240	Half-Hour Lesson (Piano)	1
Piano Proficiency exam required		
MUSA 139	Half-Hour Lesson (Voice)	1
MUSA 140	Half-Hour Lesson (Voice)	1
MUSA 239	Half-Hour Lesson (Voice)	1
MUSA 240	Half-Hour Lesson (Voice)	1
MUSA 240	Half-Hour Lesson (Voice)	1
MUSC 381+	Concert Choir	1
Voice Proficiency exam required		
MUSC 403	Music Education: Secondary Vocal Methods	2
MUSC 404	Music Education: Practicum (Secondary Vocal)	1
MUSC 413	Advanced Choral Conducting	2
<b>Total Hours</b>		<b>15</b>

The student must also pass a voice proficiency examination and a piano proficiency examination prior to student teaching.

### Vocal

For those students who have begun the program with a voice, keyboard, or guitar concentration (as described above) and need to add the instrumental component of the five-year program, the following additional courses are required:

MUSC 301	Music Education: High Brass Class	1
MUSC 302	Music Education: Low Brass Class	1
MUSC 303	Music Education: Clarinet Class	1
MUSC 304	Music Education: Woodwind Class	1
MUSC 305	Music Education: Upper Strings Class	1
MUSC 306	Music Education: Lower Strings Class	1
MUSC 307	Music Education: Percussion Class	1
MUSC 407	Music Education: Secondary Instrumental Methods	2
MUSC 408	Music Education: Practicum (Secondary Instrumental)	1
MUSC 414	Advanced Instrumental Conducting	2
MUSC 380	Symphony Band	1
or		
MUSC 382+	Wind Ensemble	
or		
MUSC 383+	Symphony Orchestra	
<b>Total Hours</b>		<b>13</b>

## Ensemble Options for Bachelor of Music and Music B.A. Majors

Each degree program has specific ensemble requirements, which are listed under the course requirements above.

For the purposes of fulfilling large ensemble requirements, students may use only symphony band, wind ensemble, symphony orchestra, guitar ensemble, or concert choir.

For the purposes of fulfilling small ensemble requirements, students may use only Madrigal Singers, Collegium Musicum, jazz ensemble, percussion ensemble, string ensemble, woodwind ensemble, opera workshop, piano ensemble, jazz choir, or guitar ensemble.

Numerous other ensembles are offered for credit, including tuba-euphonium ensemble, Athletic Bands, Jazz Combo, Woodwind Quintet, Brass Quintet, String Quartet, Saxophone Quartet, Barbershop Quartet, Beauty Shop Quartet, and other vocal chamber ensembles.

These ensembles are put together when instrumentation allows, and each group is coached by a faculty member. Students should be aware of the necessity for ensemble diversity, and are encouraged to participate in as many different ensembles as their schedules and advisors will allow.

### Applied Lesson Continuance Policy

If a student fails two semesters of applied lessons, he or she will be required to re-audition for applied placement and may be advised to choose another degree program that does not require applied lessons. If a student has five or more unexcused absences in one semester, he or she will receive an F for that semester in applied.

### Minors in Music

#### Music History

1. For a minor in music history, the student must complete 12 hours at the 300/400 level. Prerequisites for the minor (not included in the grade point average) are MUSC 221, MUSC 222, MUSC 264A or MUSC 261, and MUSC 262. Requirements for the minor are

MUSC 361	History of Music	3
MUSC 362W	History of Music	3
MUSC 460	History of Jazz	3
400-level music history		3

#### Music Composition

2. For a minor in composition, the student must complete 12 hours at the 300/400 level. Prerequisites for the minor (not included in the grade point average) are MUSC 221 and MUSC 222. Requirements for the minor are

MUSC 335T	Music Production: MIDI I	3
MUSA 339	Hour Lesson - Applied Composition	2
MUSA 340	Hour Lesson - Applied Composition	2
MUSA 439	Hour Lesson - Applied Composition	2
MUSA 440	Hour Lesson - Applied Composition	2
One additional hour of upper-division music courses		1

#### Music Performance

3. For a minor in one of the several areas of music performance, the student must complete 12 hours at the 300/400 level. STUDENTS MUST AUDITION FOR PLACEMENT AND START LESSONS THE FIRST SEMESTER OF THE FRESHMAN YEAR. (Transfer students should audition as well for placement.) Prerequisites for the minor (not included in the grade point average) are MUSA 141, MUSA 142, MUSA 241, and MUSA 242. Requirements for the minor are

MUSA 341	Hour Lesson	2
MUSA 342	Hour Lesson	2
MUSA 441	Hour Lesson	2
MUSA 442	Hour Lesson	2

Four additional hours of upper-division music courses 4

Vocal Performance minors must take the following:

MUSC 345	Diction for Singers	1
MUSC 346	Diction for Singers	1

4. All music minors are required to attend 24 Blue Card events in order to be eligible for graduation. These department-approved events are posted each semester. Four of the 24 Blue Cards required for graduation must be Diehn Series concerts. Students may not graduate without fulfilling this requirement. It is strongly recommended that a student attend at least one Diehn concert a year to meet this goal.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

### Placement Examinations in Music

All applicants for music curricula that require applied lessons are required to satisfy auditions in their major performance areas prior to approval for admission to these curricula. PLEASE NOTE: If placed in a half-hour applied lesson, students MUST audition again for placement into an hour lesson (i.e., 140 to 141).

Students transferring into the Department of Music are required to take placement examinations in theory and ear training and in any applied area, including voice or piano class, in which they wish to transfer credit.

Application must be made to the chair of the Department of Music for details and dates of placement examinations and auditions for performing organizations.

### Student Handbook

All music majors and minors are strongly encouraged to consult the Student Handbook for further information regarding juries, blue cards, Student Performance Hour and General Student Recital requirements, etc. This handbook may be found online at the website for the Department of Music.

### Accompanying

All keyboard students are expected to accompany at least once a semester on a General Student Recital, Performance Session, or Applied Music Jury Examination after they have attained the Applied Music numbering of 241 and above or 251 and above, and after they have studied keyboard at Old Dominion University for a minimum of one semester.

### Financial Aid

Scholarships equal to as much as full in-state tuition are available for talented students who perform in ensembles. Refer to the Scholarships section of this Catalog (p. 37) for more information.

### Philosophy and Religious Studies

Yvette E. Pearson, Chair  
James Van Dore, Chief Departmental Advisor  
Phone: 757 683-3861  
Website: <http://www.odu.edu/philosophy>

The Department of Philosophy and Religious Studies offers a Bachelor of Arts degree in philosophy, philosophy with an emphasis in political and legal studies, and philosophy with an emphasis in religious studies. The program is designed to give students a solid grounding in the historical development of philosophy and an ability to analyze the validity and soundness of arguments proposed in serious discussions of any subject. The emphasis in political and legal studies is designed for students planning to go to law school and students generally interested in social and political philosophy. The emphasis in religious studies is designed to assist the student in understanding the role of religion in human culture.

The requirements are as follows.

# Bachelor of Arts–Philosophy Major

## Lower Division General Education

Written Communication *	6
Oral Communication	3
Mathematics	3
Information Literacy and Research	3
Language and Culture **	0-12
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology	3
Human Behavior	3
<b>Total Hours</b>	<b>41-53</b>

\* Grade of C or better required in both courses and in ENGL 110C before declaring major.

\*\* BA students must have competence through the 202 level; competence is not met by completion of an associate degree.

## Departmental Requirements

The requirements are a minimum of 33 credit hours in 300- and 400-level PHIL and REL courses, nine hours of which must be at the 400 level. Students must select one of the following three concentrations. (Students interested in double majoring in philosophy and political science should see below. Students interested in double majoring in philosophy and a subject other than political science should consult the chief departmental adviser; there may be some opportunity for double counting at least one class.)

### General Concentration

#### History of Philosophy

PHIL 330W	Ancient Philosophy	3
PHIL 331	Modern Philosophy	3
Additional PHIL course on 18th century or earlier philosophy *		3

#### Logic

PHIL 340	Logic I	3
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#### Recent Philosophy

Select two of the following: 6

PHIL 304	Marx and the Marxists	
PHIL 305	American Philosophy	
PHIL 383T	Technology: Its Nature and Significance	
PHIL 402	Gender and Philosophy	
PHIL 404	Twentieth Century Continental Philosophy	
PHIL 406	Contemporary Analytic Philosophy	
PHIL 411	Postmodernism and Political Philosophy	
PHIL 431	Nineteenth-Century Philosophy	
PHIL 434	Contemporary Theory of Knowledge	
PHIL 435	Philosophy of Psychology	

PHIL course on 19th century or later philosophy \*

#### Ethics and Values

Select one of the following: 3

PHIL 313	Philosophy of Religion	
PHIL 324	Philosophy of Art	
PHIL 410	Social and Political Philosophy	
PHIL 411	Postmodernism and Political Philosophy	
PHIL 441	Foundations of Ethics	
PHIL 442E	Studies in Applied Ethics	

#### Seminar

Select one of the following: 3

PHIL 491	Seminar in Philosophy	
PHIL 492	Seminar in Philosophy	
PHIL 493	Seminar in Philosophy	
PHIL 494	Seminar in Philosophy	

#### Philosophy Electives

Three PHIL electives \*\* 9

**Total Hours** 33

\* Must be approved by the department.

\*\* To total at least nine hours in philosophy courses.

Students may "double count" a seminar toward their seminar requirement and either the history of philosophy or recent philosophy requirement, as appropriate. In that case, they will need to take an additional 3 hours of philosophy (PHIL) elective credit, for a total of 12. Religious Studies (REL) courses can only be counted as philosophy electives with the prior consent of the chief departmental advisor.

## Political and Legal Studies Concentration

#### History of Philosophy

PHIL 330W	Ancient Philosophy	3
PHIL 331	Modern Philosophy	3

#### Logic

PHIL 340	Logic I	3
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#### Recent Philosophy

Select two of the following: 6

PHIL 304	Marx and the Marxists	
PHIL 305	American Philosophy	
PHIL 383T	Technology: Its Nature and Significance	
PHIL 402	Gender and Philosophy	
PHIL 404	Twentieth Century Continental Philosophy	
PHIL 406	Contemporary Analytic Philosophy	
PHIL 411	Postmodernism and Political Philosophy	
PHIL 431	Nineteenth-Century Philosophy	
PHIL 434	Contemporary Theory of Knowledge	
PHIL 435	Philosophy of Psychology	

PHIL course focusing on 19th century or later philosophy \*

#### Seminar

Select one of the following: 3

PHIL 491	Seminar in Philosophy	
PHIL 492	Seminar in Philosophy	
PHIL 493	Seminar in Philosophy	
PHIL 494	Seminar in Philosophy	

#### Political and Legal Core

Select two of the following: 6

PHIL 304	Marx and the Marxists	
PHIL 410	Social and Political Philosophy	
PHIL 411	Postmodernism and Political Philosophy	
PHIL 412	Philosophy of Law	
PHIL 441	Foundations of Ethics	

#### Political and Legal Electives

Select two of the following: 6

1-2 courses from Political and Legal Studies core		
PHIL 303E	Business Ethics	
PHIL 345E	Bioethics	
PHIL 355	Computer Ethics	
PHIL 442E	Studies in Applied Ethics	

#### Philosophy Elective

One PHIL course	3
Total Hours	33

\* Must be approved by the department.

Students may "double count" a seminar toward their seminar requirement and either the history of philosophy or recent philosophy requirement, as appropriate. In that case, they will need to take an additional 3 hours of philosophy (PHIL) elective credit, for a total of 6. Religious Studies (REL) courses can only be counted as philosophy electives with the prior consent of the chief departmental advisor.

## Religious Studies Concentration

### History of Philosophy 9

PHIL 330W	Ancient Philosophy
PHIL 331	Modern Philosophy
PHIL course in 18th century or earlier philosophy *	

### Recent Philosophy 6

Select two of the following:

PHIL 304	Marx and the Marxists
PHIL 305	American Philosophy
PHIL 383T	Technology: Its Nature and Significance
PHIL 402	Gender and Philosophy
PHIL 404	Twentieth Century Continental Philosophy
PHIL 406	Contemporary Analytic Philosophy
PHIL 411	Postmodernism and Political Philosophy
PHIL 431	Nineteenth-Century Philosophy
PHIL 434	Contemporary Theory of Knowledge
PHIL 435	Philosophy of Psychology
PHIL course in 19th century or later philosophy *	

### Seminar 3

Select one of the following:

PHIL 491	Seminar in Philosophy
PHIL 492	Seminar in Philosophy
PHIL 493	Seminar in Philosophy
PHIL 494	Seminar in Philosophy

### Religious Studies 3

PHIL 313	Philosophy of Religion
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### Religious Traditions 9

Nine hours total, with at least 3 hours from each group:

<b>Western courses</b>	
REL 311	Hebrew Bible/Old Testament
REL 312	New Testament
REL 350	Judaism
REL 351	Christianity
REL 352	Islam
<b>Eastern Courses</b>	
PHIL 353	Asian Religions
PHIL 354	Comparative Philosophy East and West - Personhood
PHIL 427	Myth and Philosophy
PHIL 480	Hinduism
PHIL 481	Buddhism
PHIL 482	Chinese Religion and Philosophy
PHIL 485	Japanese Religion and Philosophy

### Philosophy and Religion Elective 3

One PHIL or REL course	
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Total Hours	33
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\* Must be approved by the department.

Students may "double count" a seminar toward their seminar requirement and either the history of philosophy or recent philosophy requirement, as appropriate. In that case, they will need to take an additional 3 hours of philosophy (PHIL) or religious studies (REL) elective credit, for a total of 6.

## Electives

Elective courses may be taken for the remainder of the minimum 120 credits required for the degree.

## Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Social Science Component within the College of Arts and Letters that are not required by the major (6 hours).

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Minors in Philosophy and Religious Studies

The requirements for minors in philosophy and religious studies are as follows:

### Philosophy (General)

Twelve hours in philosophy (PHIL) courses at the 300 and 400 level 12

### Philosophy-Applied Ethics 12

PHIL 441	Foundations of Ethics
Select three from the following:	
PHIL 303E	Business Ethics
PHIL 344E	Environmental Ethics
PHIL 345E	Bioethics
PHIL 355	Computer Ethics
PHIL 402	Gender and Philosophy
PHIL 410	Social and Political Philosophy
PHIL 442E	Studies in Applied Ethics

### Philosophy-Religious Studies

Select four from the following: 12

REL 311	Hebrew Bible/Old Testament
REL 312	New Testament
REL 350	Judaism
REL 351	Christianity
REL 352	Islam
PHIL 313	Philosophy of Religion
PHIL 353	Asian Religions
PHIL 354	Comparative Philosophy East and West - Personhood
PHIL 427	Myth and Philosophy
PHIL 480	Hinduism
PHIL 481	Buddhism
PHIL 482	Chinese Religion and Philosophy
PHIL 485	Japanese Religion and Philosophy

### Philosophy-Political and Legal Studies 12

Select at least two from the following:	
PHIL 304	Marx and the Marxists

PHIL 340	Logic I
PHIL 410	Social and Political Philosophy
PHIL 411	Postmodernism and Political Philosophy
PHIL 412	Philosophy of Law
PHIL 441	Foundations of Ethics
Select from the following other options to complete a total of 12 credits:	
PHIL 303E	Business Ethics
PHIL 344E	Environmental Ethics
PHIL 345E	Bioethics
PHIL 355	Computer Ethics
PHIL 402	Gender and Philosophy
PHIL 442E	Studies in Applied Ethics

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Advanced Placement

Since the study of philosophy (and religion) involves intensive work with sophisticated texts and extensive analytical and critical writing, credit by examination is not usually appropriate. Students who believe that there are reasons why they should be considered for exceptions to this policy should present their cases in writing to the chair of the department, who, when appropriate, will refer them to the departmental committee. Generally, such things as "reading on one's own" are not considered an adequate basis for such a petition. Students who have earned credit for one of the introductory philosophy and ethics way of knowing courses (e.g., PHIL 110P, PHIL 120P, PHIL 140P, PHIL 230E, or PHIL 250E) may not receive credit by examination for another of them.

## Double Majoring in Philosophy and Political Science

The departments of Political Science and Geography and Philosophy and Religious Studies have established an arrangement that makes it possible to complete a double major in as few as 55 hours, little more than the 45-49 hours needed for a major in one and minor in the other. Philosophy majors on the Political-Legal Studies track double-majoring in Political Science will be allowed to count any two of the following Political Science courses toward their philosophy major:

Select two of the following:		6
POLS 310	Political Theory	
POLS 312	American Political Thought	
POLS 403	First Amendment Freedoms	
POLS 408	American Constitutional Law and Politics I	
POLS 409	American Constitutional Law and Politics II	
POLS 419	Jurisprudence	

Total Hours	6
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These courses will count as Political and Legal electives; students will still be required to take 6 hours from the Political and Legal core courses. Students doing the accelerated B.A./M.A. in Philosophy and Humanities can count no more than one 500-level Political Science course as a "bridge" course. Political Science "topics" course may also be counted as Philosophy electives when the topic covered is appropriate; prior approval is required from the chief departmental advisor of Philosophy and Religious Studies. Political Science will also double count certain Philosophy courses towards its major for double majors; see the Political Science section of this Catalog (<http://www.odu.edu/pols-geog>) for details.

## Accelerated Master of Arts in Humanities-Philosophy

By allowing exceptional philosophy majors to count up to 12 hours of graduate courses toward both an undergraduate and graduate degree, this degree program makes it possible for students with a demonstrated record of academic excellence to earn both a B.A. in philosophy and an M.A. in humanities with a concentration in philosophy in five years. For more information consult the Humanities section of this Catalog (<http://catalog.odu.edu/undergraduate/collegeofartsletters/philosophyandreligiousstudies/#acceleratedmasterofartsinhumanities-philosophy>).

## Political Science and Geography

Francis Adams, Chair

The Department of Political Science and Geography offers undergraduate degrees in political science and geography.

In political science, the department offers Bachelor of Arts and Bachelor of Science degrees. The political science program is designed to give students an essential core of basic knowledge and analytical skills, while providing an opportunity to specialize in one of two emphasis areas: American politics and public law, or international relations and comparative politics.

In geography the department offers Bachelor of Arts and Bachelor of Science degrees. The geography program is designed to give students a broad base of geographical training and an understanding of human-environment interrelationships, while providing an opportunity to specialize in one of three concentration areas: urban planning and emergency/hazards management, environment and resources, and geographical information systems (B.S. only). Undergraduate and graduate certificates in geographic information science and in spatial analysis of coastal environments are also offered.

In addition to developing subject-area expertise, political science and geography courses are designed to build analytic and communication skills. Writing skills are emphasized throughout the curriculum. Undergraduates in most 400-level courses in political science and geography are required to make oral presentations in class. Instructors also strengthen students' verbal competency skills through in-class discussions. Students gain technical skills in lower and upper-level methods classes where computers are employed for data analysis and social science research.

Undergraduate students may earn honors in the major in political science or geography by fulfilling all the requirements for the specific degree (B.A. and B.S.) and meeting the honors requirements indicated below. The requirements for honors do not increase the credit hours necessary for the major.

## Bachelor of Science and Bachelor of Arts—Political Science Major

To be named, Chief Departmental Advisor

### Lower Division General Education

Written Communication *	6
Oral Communication	3
Mathematics **	3
Language and Culture ***	0-12
Information Literacy and Research ****	
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology	3
Human Behavior +	3



Total Hours 38-50

- \* Grade of C or better required in both courses and in ENGL 110C before declaring major.
- \*\* BS requires C- or better in STAT 130M. STAT 130M is also recommended for the BA degree though MATH 102M, MATH 103M or MATH 162M are also acceptable.
- \*\*\* BS students' competence must be at the 102 level. BA students must have competence through the 202 level. Competence is not met by the associate degree for BA students.
- \*\*\*\* Satisfied in the major with POLS 308.
- + ECON 201S is a departmental requirement and is not met by the associate degree.

### Foundation courses (B.A. 15 hours, B.S. 18 hours)

POLS 100S	Introduction to International Politics	3
POLS 101S	Introduction to American Politics	3
POLS 102S	Introduction to Comparative Government and Politics	3
POLS 308	Research Design (C- or better) *	3
POLS 418	Quantitative Methods (BS only)	3
ECON 202S or GEOG 100S	Principles of Microeconomics or Cultural Geography	3

\* Meets information literacy and research requirement.

### Political Science 300-400 level electives (B.A. 24 hours. B.S. 21 hours)

Both the B.A. and B.S. require that at least nine hours are at the 400 level. Both require a minimum of nine hours in each of two emphasis areas: American politics/public law and international relations/comparative politics. No more than three hours can be taken from POLS 367 and POLS 368 and no more than three hours can be taken from POLS 497. One elective must be writing intensive. All majors must complete and submit to the department a capstone paper in the junior or senior year.

POLS 300-400 electives	9
POLS 300-400 level writing intensive (W) course *	3
POLS 300-400 (BA only)	3
POLS 400-level electives	9

\* C or better required.

See course listings in this Catalog for elective choices.

### Electives

Elective courses may be taken for the remainder of the minimum 120 credits required for the degree.

### Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major.
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study.
- Option C. International business and regional courses or an approved certification program, such as teaching licensure.
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Arts and Humanities Component within the College of Arts and Letters that are not required by the major (6 hours).

Graduation requirements include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W)

course in the major with a grade of C or better, and completion of Senior Assessment.

## Double Majoring in Philosophy and Political Science

The departments of Political Science and Geography and Philosophy and Religious Studies have established an arrangement that makes it possible to complete a double major in as few as 55 hours, little more than the 45-49 hours needed for a major in one and minor in the other. Political Science majors double-majoring in Philosophy (on the Political-Legal Studies track) will be allowed to count any two of the following Philosophy courses as Political Science electives:

PHIL 304	Marx and the Marxists	3
PHIL 410	Social and Political Philosophy	3
PHIL 411	Postmodernism and Political Philosophy	3
PHIL 412	Philosophy of Law	3

These courses will not count toward the requirement to take a specific number of hours in the American politics/public law and international relations/comparative politics emphasis areas. Philosophy "topics" courses and PHIL 442E may also be counted as Political Science electives when the topic covered is appropriate; prior approval is required from the chief departmental advisor of Political Science and Geography. Philosophy will also count certain Political Science courses towards its major for double majors; see the Philosophy section of this Catalog for details.

## Bachelor of Arts and Bachelor of Science—Geography Major

Jonathan Leib, Chief Departmental Advisor

### Lower Division General Education

Written Communication *	6
Oral Communication	3
Mathematics **	3
Language and Culture ***	0-12
Information Literacy and Research ****	
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science *****	8
Impact of Technology +	0-3
Human Behavior ++	3
Total Hours	35-50

\* Grade of C or better required in both courses and in ENGL 110C before declaring major.

\*\* BS students must earn C- or better in STAT 130M.

\*\*\* BS Students' competence must be at the 102 level. BA students must have competence through the 202 level. Competence is not met by the associate degree for BA students.

\*\*\*\* Satisfied in the major with GEOG 308.

\*\*\*\*\* OEAS 106N, OEAS 108N, OEAS 111N, or OEAS 112N is recommended for one of the two nature of science courses.

+ Can be met with GEOG 306T.

++ GEOG 100S and GEOG 101S cannot be used to satisfy this requirement.

<b>Required Courses</b>	12-18
GEOG 100S	Cultural Geography
GEOG 101S	Environmental Geography
GEOG 300	Maps and Geographic Information

GEOG 308	Research Design *
GEOG 418	Quantitative Methods **
Select one of the following: ***	
GEOG 400W	Seminar in Geography
or	
GEOG 422W	Coastal Geography
or	
GEOG 454W	Latin America
or	
GEOG 480W	Senior Seminar in International Studies

\* C- or better. Meets information literacy and research requirement.

\*\* BS only. GEOG 402 and GEOG 404 may be substituted for GEOG 418.

\*\*\* C or better required.

### Geography 300-400 level electives (B.A. 21 hours, B.S, 18 hours)

At least nine credit hours must be taken at the 400 level. Those wishing to pursue a physical geography concentration may substitute the following ocean, earth and atmospheric science courses for up to 12 hours of Geography credit:

OEAS 306	Oceanography	3
OEAS 310	Global Earth Systems	3
OEAS 344W	Geomorphology	3
OEAS 412	Global Environmental Change	3
OEAS 443	General Meteorology	3
OEAS 448	Population Ecology	3

Three hours of internship count toward the 36 hours of geography courses. All majors must complete a capstone paper in the junior or senior year.

### General Program

GEOG 300-400 electives (BA only)	12
GEOG 300-400 electives (BS only)	9
GEOG 400-level electives	9

### Urban Concentration

GEOG 310	Geography of the City	3
GEOG 410	Seminar in Urban Geography	3
GEOG 300-400 electives	6	
Select two of the following:	6	
GEOG 306T	Hazards: Natural and Technological	
GEOG 321	World Economic Geography	
GEOG 368	Internship in Geography	
GEOG 402	Geographic Information Systems	
GEOG 411	Urban and Regional Planning	
GEOG 412	Cities of the World	
Total Hours		18

### Environment and Resources Concentration

GEOG 305	World Resources	3
GEOG 405	Seminar in International Resource Management	3
Select two of the following:	6	
GEOG 306T	Hazards: Natural and Technological	
GEOG 321	World Economic Geography	
GEOG 368	Internship in Geography	
GEOG 420	Marine Geography	
GEOG 422W	Coastal Geography	
GEOG 451	Europe	

GEOG 452	Africa
GEOG 453	Asia
GEOG 454W	Latin America
GEOG 455	The Middle East
Approved Study Abroad options	
Total Hours	12

### Geographic Information Systems Concentration (B.S. only)

GEOG 402	Geographic Information Systems	3
GEOG 404	Digital Techniques for Remote Sensing	3
Select two of the following:	6	
GEOG 419	Spatial Analysis of Coastal Environments	
GEOG 432	Advanced GIS	
GEOG 490	Applied Cartography/GIS	
Total Hours		12

**Electives:** Elective courses may be taken for the remainder of the minimum 120 credits required for the degree.

### Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major.
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study.
- Option C. International business and regional courses or an approved certification program, such as teaching licensure.
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Arts and Humanities Component within the College of Arts and Letters that are not required by the major (6 hours).

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

### Bachelor of Arts and Bachelor of Science with Honors–Political Science Major

The requirements are as follows:

1. Attain an overall grade point average of 3.25.
2. Attain a grade point average in the major of 3.50.
3. Earn honors in nine hours of courses in the major at the 300/400 level, excluding internship and independent study courses, with no more than six hours taken from the same instructor.

### Bachelor of Arts and Bachelor of Science with Honors–Geography Major

The requirements are as follows:

1. Attain an overall grade point average of 3.25.
2. Attain a grade point average in the major of 3.50.
3. Earn honors in nine hours of courses in the major at the 300/400 level, excluding internship and independent study courses, with no more than six hours taken from the same instructor.

### Minors in Political Science

One general minor and a minor with a specialization in public law are offered in political science. Each requires a specified introductory course as a prerequisite and 12 hours of 300/400-level courses. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level

courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University. No more than a total of three credit hours will be counted toward the political science minor from POLS 367, POLS 368 and POLS 497.

1. Political Science. POLS 100S, POLS 101S or POLS 102S is a prerequisite for the minor and is not included in the calculation of the grade point average for the minor. The minor requires 12 hours of 300/400-level political science electives.
2. Public Law. POLS 101S is a prerequisite for the minor and is not included in the calculation of the grade point average for the minor. The minor requires 12 hours from the following:

Select four of the following:	12
POLS 301W	Introduction to Public Law
POLS 306	Judicial Process and Behavior
POLS 307	Constitutional Criminal Procedure
POLS 403	First Amendment Freedoms
POLS 408	American Constitutional Law and Politics I
POLS 409	American Constitutional Law and Politics II
POLS 419	Jurisprudence
POLS 421	International Law
Public law topics courses such as:	
POLS 495/496	Topics in Political Science
Total Hours	12

## Minors in Geography

One general minor and a minor with a specialization in environment and resources are offered in geography. Each requires an introductory course as a prerequisite and 12 hours of 300/400-level courses. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

1. Geography. GEOG 100S or GEOG 101S is a prerequisite for the minor and is not included in the calculation of the grade point average for the minor. The minor requires 12 hours of 300/400-level geography electives.
2. Environment and Resources. GEOG 100S or GEOG 101S is a prerequisite for the minor and is not included in the calculation of the grade point average for the minor. Requirements for the minor are:

GEOG 305	World Resources	3
GEOG 405	Seminar in International Resource Management	3
Select two of the following courses:		6
GEOG 306T	Hazards: Natural and Technological	
GEOG 420	Marine Geography	
GEOG 422W	Coastal Geography	
Total Hours		12

## Advanced Placement

Students interested in advanced placement credit should confer with the department chair.

## Certificate in Geographic Information Science

The certificate in geographic information science (GISci) provides a program for students and professionals pursuing careers in geographic information systems (GIS) and related spatial technologies (remote sensing, global positioning systems, cartography, and spatial data handling and analysis). Awarded upon completion of the requirements, the certificate is an affidavit of academic proficiency and is administered by the Department

of Political Science and Geography. Students must take courses in the areas listed below and complete them with a cumulative GPA of 3.00 or higher and no grade below a C (2.00). The certificate is available to undergraduate students and non-degree seeking professionals who meet the requirements. Students with comparable professional experience may be able to satisfy competencies in selected courses through examination.

Students must complete the following courses:

<b>Core Courses</b>		
GEOG 300	Maps and Geographic Information	3
GEOG 402	Geographic Information Systems	3
GEOG 404	Digital Techniques for Remote Sensing	3
<b>Developmental Courses</b>		
Select three of the following:		9
GEOG 330	Field Methods	
GEOG 368	Internship in Geography	
GEOG 400W	Seminar in Geography	
GEOG 408	Cartography	
GEOG 411	Urban and Regional Planning	
GEOG 419	Spatial Analysis of Coastal Environments	
GEOG 425	Internet Geographic Information Systems	
GEOG 432	Advanced GIS	
GEOG 490	Applied Cartography/GIS	
GEOG 495	Topics in Geography	
GEOG 497	Independent Research in Geography	
Total Hours		18

## Certificate in Spatial Analysis of Coastal Environments

The certificate in spatial analysis of coastal environments provides an interdisciplinary program for students wishing to pursue careers in coastal management or research, remote sensing, or geographic information systems (GIS) applications. Rendered upon completion of the requirements, the certificate is an academic affidavit comprised of courses in geography and ocean, earth and atmospheric sciences and is administered by the two departments. Students must take courses in the areas listed below and complete them with a cumulative GPA of 3.00 or higher and no grade below a C (2.00). The certificate is available to postgraduate professionals who meet the requirements. Students with comparable professional experience may be able to show competence in selected courses through examination.

Students seeking graduate certification should refer to the Graduate Catalog.

## Undergraduate Certification

<b>Core Courses</b>		
GEOG 404	Digital Techniques for Remote Sensing	3
Select one of the following:		3
BIOL 419	Wetland Plants	
BIOL 450	Principles of Plant Ecology	
OEAS 411	Structural Geology	
OEAS 426	Concepts in Oceanography for Teachers	
<b>Interpretive Analysis Courses</b>		
Select two of the following:		6
GEOG 402	Geographic Information Systems	
GEOG 422W	Coastal Geography	
GEOG 490	Applied Cartography/GIS	
OEAS 495	Special Topics	
<b>Capstone Seminar</b>		
Select one of the following:		3
GEOG 419	Spatial Analysis of Coastal Environments	

Total Hours 15

## Sociology and Criminal Justice

Xiushi Yang, Chair

Jeffrey Toussaint, Chief Department Advisor

The Department of Sociology and Criminal Justice offers courses in anthropology, criminal justice, sociology and social welfare. Students may earn a Bachelor of Arts or a Bachelor of Science with a major in sociology or criminal justice. The department also offers a Master of Arts in applied sociology with concentrations in sociology, criminal justice, or women's studies and a Ph.D. in criminology and criminal justice. Please refer to the graduate catalog for more information on graduate programs.

### Bachelor of Arts and Bachelor of Science – Sociology Major

#### Lower Division General Education

Written Communication *	6
Oral Communication	3
Mathematics	3
STAT 130M	Elementary Statistics (required)
Language and Culture **	0-12
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology	3
Human Behavior ***	3
Total Hours	41-53

\* Grade of C or better required in both courses and in ENGL 110C before declaring major.

\*\* BS students' competence must be at the 102 level; BA students must have competence through the 202 level and BA competency is not met by the associate degree.

\*\*\* SOC 201S cannot be used to satisfy this requirement.

#### Major Requirements

BA students must complete three credits from the Human Behavior Way of Knowing category in addition to the general education course selected, and BS students must complete an additional six credits.

#### Foundation Courses \* 12

SOC 201S	Introduction to Sociology
SOC 337	Introduction to Social Research
SOC 409W	Sociological Theory **
SOC 436	Capstone Research Project

Majors must select one of the following Concentration Areas:

#### General Sociology Concentration \*\*\* 24

SOC 300-400 Level Electives

#### Social Welfare Concentration 24

SOC 320	Social Inequality
SOC 325	Social Welfare
SOC 402	Sociology of Child Welfare

Five SOC 300-400 Level Electives \*\*\*\*

\* Required of all concentration areas.

\*\* Must be completed with a C or better

\*\*\* Up to six hours of internship course work may be used.

\*\*\*\* See course descriptions for choices.

### Electives

Elective courses may be taken for the remainder of the minimum 120 credits required for the degree.

### Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major.
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study.
- Option C. International business and regional courses or an approved certification program, such as teaching licensure.
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Arts and Humanities Component within the College of Arts and Letters that are not required by the major (6 hours).

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

### Bachelor of Arts and Bachelor of Science - Criminal Justice Major

Students are urged to take elective courses or to consider minoring in psychology, sociology, political science, computer science, information systems, or management.

Students interested in careers in corrections work including probation and parole are urged to take courses in the social welfare sequence (SOC 320, SOC 325, SOC 402) and/or minor in either sociology with a social welfare specialization or human services.

Course requirements are as follows:

### Lower Division General Education Credits

#### Lower Division General Education

Written Communication *	6
Oral Communication	3
Mathematics	3
STAT 130M	Elementary Statistics (required)
Language and Culture **	0-12
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology	3
Human Behavior	3
SOC 201S	Introduction to Sociology (required)
Total Hours	41-53

\* Grade of C or better required in both courses and in ENGL 110C before declaring major

\*\* BS students' competence must be at the 102 level. BA students must have competence through the 202 level and BA competence is not met by the associate degree.

## Major Requirements

BA and BS students must complete PSYC 201S. BS students must also complete three credits from the Human Behavior Way of Knowing category in addition to the general education course selected (CRJS 215S cannot be used to meet this requirement).

<b>Foundation Courses</b>		18
CRJS 215S	Introduction to Criminology	
CRJS 222	The Criminal Justice System	
CRJS 262	Law and the Criminal Justice System	
SOC 337	Introduction to Social Research	
CRJS 426W	Criminological Theory *	
CRJS 436	Capstone Research Project	
<b>Stratification Course</b>		3
SOC 320	Social Inequality	
SOC 323	Sociology of Minority Families	
SOC 340	Sociology of Women	
SOC 402	Sociology of Child Welfare	
SOC 426	The Sociology of Minority Groups	
ANTR 320	The Sexes in Cross-Cultural Perspective	
<b>Upper Level Law Component</b>		3
CRJS 320	Law and Social Control	
CRJS 448	Women, Sex Discrimination and the Law	
CRJS 462	Substantive Criminal Law	
	or other approved course	
<b>Criminal Justice 300-400 Level Electives **</b>		18
<b>Total Hours</b>		42

\* Course must be completed with a C or better

\*\* Any 300-400 level criminal justice course may satisfy the elective requirements. Up to six hours of internship course work may also be used.

## Electives

Elective courses may be taken for the remainder of the minimum 120 credits required for the degree.

## Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major.
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study.
- Option C. International business and regional courses or an approved certification program, such as teaching licensure.
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Arts and Humanities Component within the College of Arts and Letters that are not required by the major (6 hours).

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Minors in Sociology and Criminal Justice

Requirements for minors in sociology and criminal justice are as follows:

### Sociology

SOC 201S is a prerequisite for the minor and is not included in the calculation of the grade point average for the minor. Required courses are:

Select one of the following:		3
SOC 320	Social Inequality	
SOC 337	Introduction to Social Research	
SOC 409W	Sociological Theory	
300/400 Level Sociology Courses *		9
<b>Total Hours</b>		12

\* Excluding SOC 320 and SOC 368

A maximum of one topics course (SOC 395/SOC 396 or SOC 495/SOC 496) may be included. If SOC 320 or SOC 337 is used to satisfy another requirement, it cannot be used for the minor.

### Sociology (Social Welfare Specialization)

SOC 201S is a prerequisite for the minor and is not included in the calculation of the grade point average for the minor. Required courses are:

SOC 325	Social Welfare	3
SOC 402	Sociology of Child Welfare	3
SOC 320	Social Inequality	3
One 300/400-level SOC course *		3
<b>Total Hours</b>		12

\* Excluding SOC 367 and SOC 368

### Criminal Justice

CRJS 215S and CRJS 222 are prerequisites for the minor and are not included in the calculation of the grade point average for the minor. Required courses are:

Four 300/400-level Criminal Justice courses *	12
<b>Total Hours</b>	12

\* Excluding CRJS 367 and CRJS 368

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor through courses offered by Old Dominion University.

## Children's Rights Interdisciplinary Minor

Karen Polonko, Coordinator

This interdisciplinary minor is focused on the exploration of child rights within and across diverse disciplines and in the U.S. and internationally. This perspective challenges approaches in the various disciplines that have in their study of children traditionally denied or failed to recognize children's human rights and dignity. In place of the traditional perspectives, courses in this interdisciplinary minor frame the study of children within the larger framework of human rights, more specifically, children's rights and status as a group within society in social science research and theory, literature, the arts, humanities, education, counseling, law and public policy.

Course options are as follows:

Select four of the following:		12
COMM 427	Children's Communication Theory and Research	
CRJS/SOC 403	Violence in the World of Children	
CRJS/SOC 408	Children's Rights and the Law	
HMSV 448	Interventions and Advocacy with Children	
PSYC 351	Child Psychology	
SOC 402	Sociology of Child Welfare	
TLED 476	Practical Applications in the World of Children	
<b>Total Hours</b>		12

The children's rights interdisciplinary minor requires 12 credit hours of 300/400-level courses selected from at least two different disciplines with a maximum of six credits from any one discipline. For completion of the interdisciplinary minor, students must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses. At least six hours of 300/400 upper-level courses must be taken through courses offered by Old Dominion University. Three credit hours may be in the major, if a major course is listed as an option for the interdisciplinary minor. As such, it will be credited toward both the major and the interdisciplinary minor.

## Double Major or Major and Minor in Criminal Justice and Sociology

Students double majoring in criminal justice and sociology (or vice versa) may use a maximum of five cross-listed courses for both majors. Students with a major in criminal justice and a minor in sociology (or vice versa) cannot use any cross-listed course to meet requirements for both the major and minor.

## Advanced Placement

Students interested in credit by examination should consult with the department chair.

## Women's Studies

(757) 683-3823

[www.al.odu.edu/womens\\_studies/](http://www.al.odu.edu/womens_studies/)

Jennifer Fish, Chair

Women's studies is a multi- and interdisciplinary field of study encompassing all aspects, historical and contemporary, of women's natures, lives, and perspectives. The Women's Studies Department offers the Bachelor of Arts and Bachelor of Science degrees with a major in women's studies. A minor and a graduate certificate are also available, as is an accelerated program allowing exceptional students to earn both a B.A. or B.S. in women's studies and an M.A. in humanities in five years.

The women's studies undergraduate major and minor and graduate certificate may increase a student's career opportunities in governmental and non-governmental agencies, law, criminal justice, public relations, journalism, counseling, the health professions, business, social welfare, education, and many other fields; they can also prepare students for new and exciting research opportunities in graduate and doctoral programs.

## Bachelor of Arts or Bachelor of Science—Women's Studies Major

Written Communication *	6
Oral Communication	3
Mathematics	3
Language and Culture **	0-12
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology ***	
Human Behavior ****	3
<b>Total Hours</b>	<b>38-50</b>

\* Grade of C or better required in both courses and in ENGL 110C before declaring major

\*\* Proficiency through 102 level-BS only; Proficiency through 202 level-BA only and not met by associate degree.

\*\*\* Satisfied in the major by WMST 390T.

\*\*\*\* WMST 201S cannot be used to satisfy this requirement.

## Bachelor of Arts - Departmental Requirements

WMST 201S	Introduction to Women's Studies *	3
WMST 302W	Dimensions of Diversity: Intersectionality Among Women *	3
or WMST 301	Feminist Foundations	
WMST 390T	Women and Technology Worldwide	3
WMST 400	U.S. Women's Activism	3
or HIST 363	Women in U.S. History	
WMST 401W	Women: A Global Perspective	3
WMST 460W	Feminist Theory *	3
ENGL 463W	Women Writers	3
ENGL 477	Language, Gender and Power	3
WMST 490	Capstone Course	3
Select three of the following:		9
WMST 303	Queer Studies	
WMST 304	Chick Flicks	
WMST 368	Internship	
WMST 377	Extracurricular Studies	
WMST 395/495	Topics in Women's Studies	
WMST 470	Feminist Research Methods	
WMST 497	Independent Study	
WMST 498	Independent Study	
Or courses cross listed with WMST		
<b>Total Hours</b>		<b>36</b>

\* Grade of C or higher required.

## Bachelor of Science - Departmental Requirements

WMST 201S	Introduction to Women's Studies *	3
WMST 302W	Dimensions of Diversity: Intersectionality Among Women *	3
or WMST 301	Feminist Foundations	
WMST 390T	Women and Technology Worldwide	3
WMST 400	U.S. Women's Activism	3
or HIST 363	Women in U.S. History	
WMST 401W	Women: A Global Perspective	3
WMST 460W	Feminist Theory *	3
WMST 470	Feminist Research Methods	3
ENGL 477	Language, Gender and Power	3
WMST 490	Capstone Course	3
Select three of the following:		9
WMST 303	Queer Studies	
WMST 304	Chick Flicks	
WMST 368	Internship	
WMST 377	Extracurricular Studies	
WMST 395/495	Topics in Women's Studies	
WMST 497	Independent Study	
WMST 498	Independent Study	
Or courses cross-listed with WMST		
<b>Total Hours</b>		<b>36</b>

\* Grade of C or higher required.

## Electives

Elective courses may be taken for the remainder of the minimum 120 credits required for the degree.

## Upper Division General Education

- Option A. Approved Minor, 12-24 hours; also second degree or second major.
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study.
- Option C. International business and regional courses or an approved certification program, such as teaching licensure.
- Option D. Two Upper-Division Courses from outside the College of Arts and Letters or from the Arts and Humanities Component within the College of Arts and Letters that are not required by the major (6 hours).

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment. Students must receive at least a C in WMST 201S, WMST 302W and WMST 460W. In order to track their intellectual growth, each women's studies major is expected to maintain a portfolio of papers and assignments submitted for their WMST and WMST cross-listed courses.

## Women's Studies as a Second Major

Students who find themselves especially interested in women's studies but who already have a major may fulfill their upper-division general education requirements by selecting women's studies as a second major. Such students must complete the same departmental requirements as those majoring solely in women's studies, but may count up to three women's studies cross-listed courses taken for their other major toward their women's studies major as well. For instance, a student majoring in both sociology and women's studies may apply three courses, such as SOC 340, SOC 343, and SOC 427, taken toward their sociology requirements, as the three electives for their major in women's studies.

## Minor in Women's Studies

Students who have completed WMST 201S may complete a minor in women's studies by filing an application and taking 12 hours as follows:

WMST 302W	Dimensions of Diversity: Intersectionality Among Women	3
or WMST 301	Feminist Foundations	
Select two of the following:		6
WMST 390T	Women and Technology Worldwide *	
WMST 401W	Women: A Global Perspective	
WMST 460W	Feminist Theory	
One additional WMST course **		3
Total Hours		12

\* Meets impact of technology requirement.

\*\* One additional WMST course, e.g., WMST 368, WMST 470, or a course cross-listed with women's studies in the Schedule of Classes from disciplines such as history, philosophy, communication, English, criminal justice, foreign languages, sociology, psychology, political science, art, etc.

Students must maintain a grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University. Completion of the undergraduate women's studies minor will fulfill the upper-division General Education requirements.

## Advising

To declare a women's studies major or minor, students must see an advisor in the Women's Studies Department. All women's studies majors are

required to have a conference with their advisor before each semester (preferably during preregistration).

## Accelerated Master of Arts in Humanities– Women's Studies

By allowing exceptional women's studies majors to count up to 12 hours of graduate courses toward both an undergraduate and graduate degree, this degree program makes it possible for students with a demonstrated record of academic excellence to earn both a B.A. or B.S. in women's studies and an M.A. in humanities with a concentration in women's studies in five years. For more information consult the Humanities section of this Catalog.

# Strome College of Business

Web site: <http://www.bpa.edu.edu/>

Vinod Agarwal, Interim Dean

Ali Ardalan, Associate Dean for Internal Affairs

Kiran Karande, Associate Dean for External Affairs and the Executive Development Center

Constance Merriman, Assistant Dean

## Department Chairs:

Douglas E. Ziegenfuss, Accounting

Christopher B. Colburn, Economics

Mohammad Najand, Finance

G. Steven Rhiel, Information Technology and Decision Sciences

Anil Nair, Management

Yuping Liu-Thompkins, Marketing

John R. Lombard, Urban Studies and Public Administration

Brian Kerns, Military Science and Leadership

## Center and Institute Directors:

David Selover, Center for Asian Business

Christopher Colburn, Center for Economic Education

Kiran Karande, Executive Development Center

James V. Koch, Regional Studies Institute

Bruce Rubin, Insurance and Financial Services Center

Wayne Talley, Maritime Institute

John R. Lombard, E.V. Williams Center for Real Estate and Economic Development

Old Dominion University's Strome College of Business has as its principal objective the preparation of liberally educated specialists who will enter the challenging world of business and public administration. All programs in the college are designed to promote the following: professional competence; facility in the communication arts; analytical skills; leadership abilities; an understanding of social, political, and economic forces; and a strong sense of business ethics and public purpose. This foundation enables graduates of these programs to advance in a broad range of careers in the public and private sectors.

The Strome College of Business is one of approximately 640 schools in the world to have achieved accreditation at the graduate and undergraduate levels by the Association to Advance Collegiate Schools of Business – International AACSB. The undergraduate and graduate accounting programs have received their own accreditation through the same agency. In addition, the Master of Public Administration program is one of approximately 164 graduate programs certified as meeting the standards of the National Association of Schools of Public Affairs and Administration (NASPAA).

Undergraduate students may pursue majors and special concentrations in accounting, business analytics, economics, financial management, information systems and technology, international business, management, maritime and supply chain management, and marketing management. The college offers graduate programs in accounting, business administration, economics, and public administration. Additionally, the college offers a joint master's degree in computer information science with the Computer Science Department. Information about the graduate programs is available in the Graduate Catalog.

Also housed within the college is the Department of Military Science and Leadership. The mission of this department is to provide professional instruction and leadership development for selected students who desire to serve in the active or reserve components of the U.S. Army. Additional information about this program may be obtained through the Military Science and Leadership Department.

## Mission Statement

To prepare students, in a global context, both professionally and ethically, for successful careers in business, government, and non-profit sectors, to

perform relevant basic, applied and educational research; all for the regional, national and global economic communities.

## Business and Public Administration Affiliates

The college has several external units that enhance and support the academic programs. These units, listed below, offer opportunities for faculty members and students to interact with representatives of business, industry and government in Eastern Virginia.

### Center for Asian Business

The Center for Asian Business has been established to enhance the college's capacity to teach and conduct research on the subjects related to Asian business practices. The center collects and disseminates information on Asian businesses, supports course offerings on Asian management, and publishes research monographs and articles on the subject. Also, the center provides managerial training and consulting services for Asian companies and executives.

### The Center for Economic Education

The center is an integral part of the national effort dedicated to improving economic literacy and promoting a greater understanding of the free enterprise system. A nonpartisan, nonprofit organization, the center is an affiliate of the Virginia Council on Economic Education and the National Council on Economic Education. The center works cooperatively with school systems promoting increased effectiveness of economics instruction in grades K-12 through workshops, credit classes and consultations.

### Executive Development Center

The center's mission is to provide businesses, organizations, and individuals with high quality professional development and continuing education programs in virtually all areas of business, management, and executive education. The center offers public programs for individuals seeking professional certificate programs, preparation for certification exams, career advancement and career change. In addition, the center develops and delivers custom programs and consulting services to meet specific organizational and employee development needs of businesses and organizations regionally, nationally and internationally.

### Regional Studies Institute

The primary objectives of the institute are to conduct research and develop a knowledge base relating to regional issues concerning Hampton Roads. In addition, via its annual *State of the Region* report, the institute provides a forum for analysis and discussions of vital issues relating to the region and its cities.

### Insurance and Financial Services Center

The Insurance and Financial Services Center supports undergraduate and graduate curricula in the disciplines of professional financial planning and risk and insurance. In addition, it provides for active involvement with the Eastern Virginia financial services community as a placement, research, consultative, and resource agency. The center further supports educational programs and seminars for the profession including a professional development program for practitioners that leads to the designation of Professional Financial Planner (PFP).

### Maritime Institute

The institute provides a focal point for educational services and research programming that is responsive to the port and shipping-related needs of Hampton Roads, Virginia, and other port and shipping-related facilities in the world. Serving as a positive link with port-related business and public administration communities, the institute provides a catalyst for the delivery of education, training, research, and service programs in both the credit and non-credit arenas. The Maritime Institute also serves as a hub for applied education, training and research related to the development and management of transportation and storage systems, with ports serving as centers of internationally complex activities. Courses are available at the undergraduate and graduate levels and are listed in this Catalog and the Graduate Catalog.



Professional, executive-level seminars, workshops, and short courses will also be offered.

## E.V. Williams Center for Real Estate and Economic Development (CREED)

The mission of the center is to serve as an educational and research resource for the Hampton Roads' economic development and real estate communities in their quest to realize sustainable land-use, strategic development and investment growth for the region. CREED is a highly-respected membership organization bridging economic development and real estate leaders with the quality comprehensive education, programming and demographic research in development at Old Dominion University. CREED plays an important role in facilitating the exchange of market analysis and projections for businesses and public agencies operating in all major market segments through various programs and outreach, including the Hampton Roads Real Estate Market Review and Forecast event and annual publication release. CREED also provides accessible and innovative programs for finance and real estate students to interact with leading industry partners in the public and private sectors.

## Distance Education

The college offers several degrees through Distance Learning to various locations in the state of Virginia and beyond. Usually students complete their general education program in a community college and transfer to Old Dominion University to complete the degree requirements. Bachelor of Science degrees in accounting, finance, information systems and technology, management, and marketing are available on this network. Minors in several disciplines are also available.

## Eligibility to Enroll in 300- and 400-Level Courses

Only the following students will be eligible to enroll in upper-level (300- and 400-level) business and economics courses:

1. Students who have been admitted to the Bachelor of Arts - Economics Major program (for requirements, see section in this catalog entitled Admission to BA - Economics Major).
2. Students who have officially completed **Step 1** Admission to the Bachelor of Science in Business Administration program (for requirements, see section in this catalog entitled Admission to majors in BSBA program). However, students who have not completed **Step 2** Admission to the BSBA program (see Admission to majors in BSBA program) are limited to completing a maximum of 18 credit hours of upper-level business and economics courses. Note: students pursuing Step 2 admission will need a Program Restriction Waiver (PRW) to enroll in any 300/400 level business or economics course. Forms to request a PRW are available on the CBPA website.
3. Students pursuing a declared minor in the Strome College of Business. These students may enroll only in 300/400-level business and economics courses appropriate to the minor.
4. Students wishing to satisfy the Upper-Division General Education Requirement with Option B: Interdisciplinary Minor or Option D: Six hours of elective upper-division courses outside the student's major discipline or college.
5. Students wishing to satisfy the Impact of Technology requirement may enroll in IT 360T.
6. Students pursuing degree programs outside the Strome College of Business that require or accept specific 300/400-level business or economics courses to complete the degree may enroll in the courses appropriate to their programs.
7. Non-degree-seeking students may enroll in 300/400-level business and/or economics courses if they have satisfied the prerequisites for these courses.

Students in categories 3 - 7 above who do not have any declared major will need a Program Restriction Waiver (PRW) in order to enroll in any

300/400 level Strome College of Business course. Forms to request a PRW are available at the CBPA website.

## Admission to BA - Economics Major

### Admission to the Bachelor of Arts - Economics Major

#### General Requirements

Applicants for admission to the Bachelor of Arts - Economics Major program should apply initially to the Office of Admissions of Old Dominion University. Students cannot be accepted into the program without first being admitted to the University. Admission to the University does not guarantee admission to the program. Candidates for admission to the program should indicate on the application to the University their intention to enter the Bachelor of Arts - Economics Major program.

All candidates for admission to the program should contact the Department of Economics directly (757-683-3567) for an application to the program. Normally, a student should apply in the sophomore year. Students will be notified in writing by the Department of the admission decision.

Before regular admission to the program can be granted, a student must have completed the following Bachelor of Arts - Economics Major foundation courses with a grade of C or better in each:

ENGL 110C	English Composition	3
MATH 162M	Precalculus I	3
ECON 201S	Principles of Macroeconomics	3
ECON 202S	Principles of Microeconomics	3

Transfer students may complete Bachelor of Arts - Economics Major foundation courses: ENGL 110C, MATH 162M, ECON 201S, and ECON 202S at another accredited college or university, but are responsible for having the Admissions Office determine that the courses are acceptable to the University. All transfer students must have a transfer student evaluation completed by the Admissions Office to be used as documentation that the transfer courses are acceptable.

Students who have utilized the Adjusted Resident Credit (ARC) option will be treated as transfer students with only those foundation courses with a grade of C or better included in the admission policy. Students may utilize the Grade Forgiveness Policy for foundation courses.

## Admission to Majors in BSBA Program

### General Requirements

Applicants for admission to any of the majors in the undergraduate degree program in business administration (the Bachelor of Science in Business Administration) should apply initially to the Office of Admissions of Old Dominion University. Students cannot be accepted into business administration without first being admitted to the University. Admission to the University does not guarantee admission to the Bachelor of Science in Business Administration (BSBA) program. Candidates for admission to the BSBA program should indicate on the application to the University their intention to enter the undergraduate business administration degree program.

Admission to the BSBA degree program is a two-step process. Students must first successfully complete **Step 1** Admission requirements (described below), and be certified as having done so, before undertaking the requirements for **Step 2** Admission to the BSBA degree program (described below).

All candidates for admission to the undergraduate business administration program should contact the Strome College of Business directly for an Application for Step 1 Admission or an Application for Step 2 Admission to the program. Applications are available on the Strome College of Business website, in all of its department offices, and in the College's Undergraduate

Advising office. Normally, students should apply for Step 1 Admission in their sophomore year. The Strome College of Business will notify students of the Step 1 Admission decision. Students should normally apply for Step 2 Admission in their junior year. The Strome College of Business Administration will notify students of the Step 2 Admission decision.

## Admission to the Bachelor's Degree Program in Business Administration: Step 1

Before Step 1 Admission to the bachelor's degree program in business administration can be granted, a student must have earned a grade of C or higher in each of the business Step 1 Admission courses:

BUSN 110	Introduction to Contemporary Business	1
ENGL 110C	English Composition	3
MATH 162M	Precalculus I	3
ACCT 201	Principles of Financial Accounting	3
ECON 202S	Principles of Microeconomics	3

BUSN 110 is not required for students pursuing the IT major or for any student with an associate's degree in business administration or a prior bachelor's degree in business administration. Students may utilize the Grade Forgiveness Policy for the business Step 1 Admission courses.

Transfer students may complete business Step 1 Admission courses BUSN 110, ENGL 110C, MATH 162M, ACCT 201, and ECON 202S at another accredited college or university, but are responsible for having Transfer Evaluation Services determine that the courses are acceptable to the University. Transfer students with associate's degrees from Virginia community colleges that have articulated transfer agreements with ODU that do not require taking ENGL 110C must substitute ENGL 221C (or ENGL 211C or ENGL 231C) for ENGL 110C in the list of business Step 1 Admission courses. All transfer students must have a transfer student evaluation completed by Transfer Evaluation Services to be used as documentation that the transfer courses are acceptable.

In addition to completing the business Step 1 Admission courses, students must have their resumes approved by the Career Management Center prior to submitting an application for Step 1 admission.

## Waiver of Eligibility Requirements to Enroll in Upper-Level Business Courses for Students Pursuing Step 1 Admission

Students with extenuating circumstances may petition the Strome College of Business Assistant Dean (Room 2004 Constant Hall) in writing for a one-time, one-semester waiver to the ban on enrollment in upper-level (300/400) business courses without Step 1 Admission to the bachelor's degree program in business administration. Waivers will be granted under the following conditions:

1. The waiver has not been granted previously.
2. The student must have successfully completed at least 42 credit hours applicable to the BSBA degree program.
3. During the semester for which the waiver is granted, the student must enroll in all remaining business Step 1 Admission courses whose successful completion with a grade of C or better would allow normal Step 1 Admission to the bachelor's degree program in business administration.

## Appealing a Denial of Step 1 Admission to the Undergraduate Business Administration Program

Students who do not achieve a grade of C or higher in the business Step 1 Admission courses BUSN 110, ENGL 110C, MATH 162M, ACCT 201, and ECON 202S after utilizing the Grade Forgiveness Policy may appeal in writing to the Associate Dean of the Strome College of Business documenting the reasons why the student should be granted Step 1 Admission to the bachelor's degree program in business administration. The Associate Dean will review the student's other coursework to determine if the student has maintained an overall 2.00 grade point average in at least 25 semester hours or 42 quarter hours from Old Dominion University or an

accredited institution of higher education. In this case, the requirement for a grade of C or better in each of the Step 1 Admission courses may, at the discretion of the Associate Dean, be waived.

## Admission to the Bachelor's Degree Program in Business Administration: Step 2

Students must first successfully complete Step 1 before undertaking the requirements for Step 2 Admission to the bachelor's degree program in business administration. Students must apply for Step 2 Admission to the program no later than the end of the semester in which they complete the following requirements:

1. Earn an overall cumulative grade point average of at least 2.00 in all courses taken through Old Dominion University.
2. Complete at least 12 hours of upper-level (300/400) courses through Old Dominion University, which must include at least six hours of upper-level courses from the Strome College of Business's Common Body of Knowledge (CBK) coursework. Note: students pursuing Step 2 admission will need a Program Restriction Waiver (PRW) to enroll in any 300/400 level business course. Forms to request a PRW are available on the CBPA website.
3. Earn a 2.00 cumulative grade point average or higher in all upper-level courses taken through Old Dominion University.
4. Earn a 2.00 cumulative GPA or higher in all Common Body of Knowledge (CBK) courses taken through ODU.

Students not meeting these requirements may wish to see the appeal procedures below.

## Appealing a Denial of Step 2 Admission to the Bachelor's Degree Program in Business Administration

Students who do not fulfill the requirements for Step 2 Admission, but who have at least a 2.00 cumulative grade point average in all of the business courses taken in the Strome College of Business at Old Dominion University, may appeal in writing to the Associate Dean of the Strome College of Business. The appeal must document the reasons why the student should be granted Step 2 Admission to the bachelor's degree program in business administration. In this case, the regular Step 2 Admission requirements may, at the discretion of the Associate Dean, be waived.

## Bachelor of Arts - Economics Major

Christopher B. Colburn, Chair  
Eric Anderson, Chief Departmental Advisor

Economics is the study of how societies use their limited resources to produce wealth and how the distribution of the wealth among their members is determined. Knowledge of economics helps businesses and households understand how economic events will affect them, how they can best react to these events, and how to assess government economic policies. Majoring in economics is a springboard to a very wide variety of careers in business, government agencies, and not-for-profit organizations. A major in economics is also excellent preparation for law school and graduate study toward master's and doctoral degrees in economics, business administration, public administration, urban studies, international studies, marine affairs, and other fields.

## Admission to the Bachelor of Arts - Economics Major

### General Requirements

Applicants for admission to the Bachelor of Arts - Economics Major program should apply initially to the Office of Admissions of Old Dominion University. Students cannot be accepted into the program without first being admitted to the University. Admission to the University does not guarantee admission to the program. Candidates for admission to the program should

indicate on the application to the University their intention to enter the Bachelor of Arts - Economics Major program.

All candidates for admission to the program should contact the Department of Economics directly (757-683-3567) for an application to the program. Normally, a student should apply in the sophomore year. Students will be notified in writing by the Department of the admission decision.

Before regular admission to the program can be granted, a student must have completed the following Bachelor of Arts - Economics Major foundation courses with a grade of C or better in each:

ENGL 110C	English Composition	3
MATH 162M	Precalculus I	3
ECON 201S	Principles of Macroeconomics	3
ECON 202S	Principles of Microeconomics	3

Transfer students may complete Bachelor of Arts - Economics Major foundation courses: ENGL 110C, MATH 162M, ECON 201S, and ECON 202S at another accredited college or university, but are responsible for having the Admissions Office determine that the courses are acceptable to the University. All transfer students must have a transfer student evaluation completed by the Admissions Office to be used as documentation that the transfer courses are acceptable.

Students who have utilized the Adjusted Resident Credit (ARC) option will be treated as transfer students with only those foundation courses with a grade of C or better included in the admission policy. Students may utilize the Grade Forgiveness Policy for foundation courses.

## Eligibility to Enroll in Upper-level (300/400-Level) Economics Courses

Only students who have been admitted to the Bachelor of Arts - Economics Major program will be eligible to enroll in 300/400-level Economics courses, with the following exceptions:

1. Students who have been admitted to the undergraduate business degree (Bachelor of Science in Business Administration) program (see section to follow). This exception applies to all of the majors in the undergraduate business degree program, not just to the Bachelor of Science in Business Administration - Economics Major.
2. Students pursuing a declared minor in Economics.
3. Students pursuing an interdisciplinary minor to meet the Upper-Division General Education Requirement may enroll in one 300/400-level Economics course included in the minor. Currently these are:

ECON 402	Transportation Economics	3
ECON 435	Health Economics: A Global Perspective	3
ECON 445W	Urban Economics	3
ECON 447W	Natural Resource and Environmental Economics	3
ECON 454W	Economic Development	3

4. Students pursuing degree programs outside the Strome College of Business that require or accept specific 300/400-level Economics courses to complete the degree may enroll in the courses appropriate to their programs.

5. Non-degree-seeking students may enroll in 300/400-level business courses if they have satisfied the prerequisites for these courses.

Students in categories 2 - 5 above who do not have a declared major will need a Program Restriction Waiver (PRW) in order to enroll in any 300/400 level Strome College of Business course (including Economics courses). Forms to request a PRW are available at the CBPA website.

## Waiver of Eligibility Requirement to Enroll in Upper-Level Economics Courses

Students with extenuating circumstances may petition the Chief Departmental Advisor of the Economics Department in writing for a waiver of the ban on enrollment in 300/400-level Economics courses without

admission to the Bachelor of Arts - Economics Major program or one of the exceptions listed in the previous section. Waivers will be considered under the following conditions:

1. The waiver can be granted only once, for one semester.
2. The student must have previously completed 42 credit hours.
3. During the semester for which the waiver is granted, the student must enroll in all remaining Bachelor of Arts - Economics Major foundation courses whose successful completion with a grade of C or better would allow normal admission to the program, or must enroll in all remaining business foundation courses whose successful completion would allow normal admission to the Bachelor of Science in Business Administration degree program.

## Appealing a Denial of Admission to the Bachelor of Arts - Economics Major Program

Students who do not achieve a C or better in each of the four foundation courses (see General Requirements, above) after utilizing the Grade Forgiveness Policy may pursue a two-step appeal process:

1. Students may appeal in writing to the Chief Departmental Advisor of the Economics Department documenting the reasons why the student should be admitted to the program. The Chief Departmental Advisor will review the student's other course work to determine if the student has maintained a 2.50 grade point average on a 4.00 scale in at least 25 semester hours or 42 quarter hours from Old Dominion University or other accredited institution of higher education. In this case, the C policy in the foundation courses may be waived at the discretion of the Chief Departmental Advisor.
2. If the student is denied admission after the appeal to the Chief Departmental Advisor, the student may appeal in writing to the Chair of the Department of Economics for a review of the admission decision.

## Minimum Grade Requirements for Completion of the Major

For completion of a major in economics, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the major. Courses included in the calculation of the grade point average in the major are: all economics courses. Students must also earn a grade of C or better in ENGL 211C or ENGL 221C, a grade of C or better in ECON 201S and ECON 202S, a grade of C or better in one of the ECON writing intensive (W) courses listed below (see Economics Electives), and a grade of C- or better must be earned in each of the remaining ECON courses as follows:

ECON 304	Intermediate Microeconomic Theory	3
ECON 305	Intermediate Macroeconomic Theory	3
ECON 450	International Economics	3
At least four 300-400 Level ECON Electives		12

## Curriculum

### Freshman

First Term	Hours	Second Term	Hours
ENGL 110C	3	ENGL 211C or 221C	3
MATH 162M	3	MATH 200	3
Language and Culture 101F	3	Human Behavior Way of Knowing	3
Information Literacy and Research Requirement	3	Language and Culture 102F	3

COMM 101R	3	Interpreting the Past Way of Knowing	3
	<b>15</b>		<b>15</b>
<b>Sophomore</b>			
<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
ECON 201S	3	ECON 202S	3
Literature Way of Knowing	3	BNAL 206	3
Nature of Science I Way of Knowing	4	Nature of Science II Way of Knowing	4
Philosophy/Ethics Way of Knowing*	3	Interpreting the Past Way of Knowing (dept requirement)	3
Foreign Language 201	3	Foreign Language 202	3
	<b>16</b>		<b>16</b>
<b>Junior</b>			
<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
ECON 304	3	ECON 305	3
BNAL 306	3	ECON Elective	3
ECON Elective	3	Upper-division General Education Course	3
Impact of Technology Way of Knowing	3	Human Creativity Way of Knowing	3
Free Elective (not ECON)	3	Free Elective (not ECON)	3
	<b>15</b>		<b>15</b>
<b>Senior</b>			
<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
ECON 450	3	ECON Electives	9
ECON Writing-Intensive Course	3	Non-Business Elective	3
ECON Elective	3	Free Elective (not ECON)	1
Upper-division General Education Course	3		
Free Elective (not ECON)	3		
	<b>15</b>		<b>13</b>

Total credit hours: 120

\* Must be a Philosophy (P) course (an Ethics (E) course will not satisfy this requirement for BA-Economics majors).

## Economics Electives

ECON 301	Managerial Economics	3
ECON 368	Internship	1-3
ECON 369	Practicum in Economics	3
ECON 395/396	Topics in Economics	1-3
ECON 400	Research Methods in Economics	3
ECON 402	Transportation Economics	3
ECON 407W	Labor Market Economics	3

ECON 421	Public Economics	3
ECON 425	Introduction to Mathematical Economics	3
ECON 427	Industrial Organization and Public Policy	3
ECON 431	Money and Banking	3
ECON 435	Health Economics: A Global Perspective	3
ECON 444	Development of the American Economy	3
ECON 445W	Urban Economics	3
ECON 447W	Natural Resource and Environmental Economics	3
ECON 451	History of Economic Thought	3
ECON 454W	Economic Development	3
ECON 455	Comparative Economic Systems	3
ECON 456	Economics of Information, the Internet and E-Commerce	3
ECON 494	Federal Reserve Policy	3
ECON 495	Selected Topics in Economics	1-3
ECON 499	Readings in Economics	3

All economics courses taken, except ECON 200S (which does not count towards any CBPA degree) and ECON 436 (which does not count towards the major in economics) will be used to compute the major grade point average, which must be a 2.0 or better. In addition, a grade of C or better must be earned in ECON 201S, ECON 202S, and one of the ECON writing intensive (W) courses, and a grade of C- or better must be earned in each of the remaining ECON courses as follows:

ECON 304	Intermediate Microeconomic Theory	3
ECON 305	Intermediate Macroeconomic Theory	3
ECON 450	International Economics	3
At least four 300-400 level ECON electives		12

Total credits needed to graduate are 120 and must include a minimum of 12 credit hours of upper-level courses in the major program. For each foreign language course that students are exempted from taking, they must take one non-business elective course. For example, students who are exempt from taking any foreign language courses must replace them with four non-business elective courses.

## Foreign Language Proficiency Requirement

Students earning a Bachelor of Arts degree must also complete the following foreign language requirement; proficiency established at the fourth-semester level through one of the following:

1. Successful completion of the 202 or 212 course at Old Dominion University (or equivalent at another institution).
2. Exemption through fourth semester granted for acceptable scores on achievement tests.
3. Advanced placement with up to nine hours credit at the 300 level for acceptable scores on the advanced placement test taken at the conclusion of advanced placement courses in high school.
4. Students whose native language is not English are exempt from taking a foreign language for General Education. Students pursuing degrees that require proficiency beyond the 100 level must be certified by the Foreign Languages and Literatures Department to obtain a waiver of the 200-400 level courses.

Students who have taken three or more years of a foreign language in high school but have not been granted advanced placement as explained in item 3 above must take the College Entrance Examination Board (CEEB) achievement test before continuing in the same language at Old Dominion University. An achievement test score of under 500 normally requires that such students begin with the 121F course in Spanish or the 102F course in another language.

## Double Major in Economics and Another Discipline

A student declaring economics as his or her second major, and whose first major is a nonbusiness discipline, need not take COMM 101R and intermediate foreign language courses, unless these courses are required for the other major/degree. The student must satisfy all written communication, oral communication, and foreign language requirements of the first major/degree.

## Bachelor of Arts with Honors - Economics Major

### Requirements

The candidate must designate, with the approval of the Economics Department's undergraduate advisor and the relevant instructors, two upper-level economics courses that he or she intends to take on an Honors basis. In these courses, the student must complete extra, honors-quality work in addition to regular course requirements, and must earn a grade of B or better in each of the two courses. The student must also earn a grade point average of 3.5 or higher in all economics courses.

## B.A./M.B.A Five-Year Program

This program allows qualified students to earn a B.A. (major in economics) followed by an M.B.A., in a total time of as little as five years, taking normal semester course loads. The entrance requirements, admissions procedure, and required courses are as described in the College of Arts and Letters section of this Catalog, except that students majoring in economics need not take ECON 604 (one of the M.B.A. business core courses).

## Minor in Economics

A minor in economics requires the completion of 12 hours of 300- and/or 400-level economics courses. The 12 hours must include either ECON 304 or ECON 305 and may include both. The 12 hours may not include ECON 368, ECON 369 or ECON 436. All courses at the 300 and 400 levels must be preceded by listed prerequisites. For completion of this minor, a student must have a minimum overall cumulative grade point average of 2.00 in all economics courses required for the minor exclusive of 100/200 level courses and prerequisite courses and complete a minimum of six hours of upper-level economics courses through courses offered by Old Dominion University. Students must earn a grade of C or better in ECON 202S and a grade of C- or better in every upper-level ECON course taken. Students must also earn a grade of C or better in ECON 201S if they wish to take ECON 305.

## Interdisciplinary Minor - The Urban Community

Christopher B. Colburn, Department of Economics, Coordinator

The interdisciplinary minor in the Urban Community encourages an interdisciplinary approach to the problems and crucial issues that emerge from urban environments. Students gain an understanding of the issues associated with the convergence of diverse populations in urban locations and acquire an appreciation of the complexities of the interlocking and contingent nature of urban problems. This will be accomplished through an examination of the topical areas of common space, diversity, urban services, disorder, and work.

Course options are as follows:

ARTH 435W	Modern Architecture	3
CHP 415W	Critical Issues in Public/Community Health Administration	3
COMM 467	Media, Politics and Civic Engagement	3
CRJS 323	Police in American Society	3
CRJS 325	Women and Crime	3
CRJS 355	Crime and the Community	3
CRJS 441	Drugs and Society	3

ECON 402	Transportation Economics	3
ECON 445W	Urban Economics	3
GEOG 310	Geography of the City	3
GEOG 411	Urban and Regional Planning	3
GEOG 412	Cities of the World	3
PSYC 431	Community Psychology	3
PRTS 433	Community Recreation	3
CRJS/SOC 444	Community Justice	3

The interdisciplinary minor in the Urban Community requires 12 credit hours of 300/400-level courses selected from at least two different disciplines with a maximum of six credits from any one discipline. For completion of the interdisciplinary minor, students must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses. At least six hours of upper-level courses must be taken through courses offered by Old Dominion University. Three credit hours may be in the major, if a major course is listed as an option for the interdisciplinary minor. As such, it will be credited toward both the major and the interdisciplinary minor.

## Bachelor of Science in Business Administration (BSBA)

### The Office of Undergraduate Advising

*The mission of this office is to fuse student development and real world applications in helping students become mature, independent, critically thinking business people and civil servants. By graduation, students should be prepared to be lifelong scholars, leaders, and citizens.*

*The Undergraduate Advising Office serves as the welcoming center for new undergraduate students to the college. All freshmen, new transfer students, or those changing majors are advised in this office as to the appropriate curricula for the majors and minors within the college by individual appointment in this office. Additionally, the office serves all Strome College of Business students as a satellite of the Career Management Center, assisting students with internships and job placement.*

Jennifer Usis, Director of Undergraduate Advising  
To be named, Assistant Director

## Eligibility to Enroll in Upper-Level (300/400-level) Business Courses

Only students who have officially completed **Step 1** Admission to the BSBA program (see below) will be eligible to enroll in upper-level (300/400) business courses (refer to exceptions for non-business majors). Students who have not completed **Step 2** Admission to the BSBA program (see below) are limited to completing a maximum of 18 credit hours of upper-level business courses. Note: students pursuing Step 2 admission will need a Program Restriction Waiver (PRW) to enroll in any 300/400 level business course. Forms to request a PRW are available on the CBPA website.

Students with extenuating circumstances may petition the Associate Dean of the Strome College of Business in writing for a one-time, one-semester waiver of the 18 hour limitation on enrollment in 300/400-level business courses without **Step 2** Admission to the BSBA degree program.

## Enrollment in 300/400-level Business Courses by Non-Business Majors

Enrollment in 300/400-level business courses will be granted without Step 1 Admission or Step 2 Admission to the bachelor's degree program in business administration for the following exceptions:

1. Students pursuing a declared minor in the Strome College of Business may enroll in 300/400-level business courses appropriate to the minor.
2. Students pursuing Upper-Division General Education Requirement Option B: Interdisciplinary Minor or Option D: Six hours of elective upper-division courses outside the student's major discipline or college.

- Students wishing to satisfy the Impact of Technology requirement may enroll in IT 360T.
- Students pursuing a degree program other than the Bachelor of Science in Business Administration (BSBA) that requires or accepts specific 300/400-level business courses to complete the degree may enroll in the courses appropriate to the major.
- Non-degree-seeking students may enroll in 300/400-level business courses if they have satisfied the prerequisites for these courses.

Students in categories 1 - 5 above who do not have a declared major will need a Program Restriction Waiver (PRW) in order to enroll in any 300/400 level Strome College of Business course (including Economics courses). Forms to request a PRW are available at the Strome College of Business website.

## Admission to the Undergraduate Program in Business Administration

### General Requirements

Applicants for admission to the undergraduate degree program in business administration (the Bachelor of Science in Business Administration) should apply initially to the Office of Admissions of Old Dominion University. Students cannot be accepted into business administration without first being admitted to the University. Admission to the University does not guarantee admission to the Bachelor of Science in Business Administration (BSBA) program. Candidates for admission to the BSBA program should indicate on the application to the University their intention to enter the undergraduate business administration degree program.

Admission to the BSBA degree program is a two-step process. Students must first successfully complete **Step 1** Admission requirements (described below), and be certified as having done so, before undertaking the requirements for **Step 2** Admission to the BSBA degree program (described below).

All candidates for admission to the undergraduate business administration program should contact the Strome College of Business directly for an Application for Step 1 Admission or an Application for Step 2 Admission to the program. Applications are available on the Strome College of Business's website, in all of its department offices, and in the College's Undergraduate Advising office. Normally, students should apply for Step 1 Admission in their sophomore year. The Strome College of Business will notify students of the Step 1 Admission decision. Students should normally apply for Step 2 Admission in their junior year. The Strome College of Business will notify students of the Step 2 Admission decision.

### Admission to the Bachelor's Degree Program in Business Administration: Step 1

Before Step 1 Admission to the bachelor's degree program in business administration can be granted, a student must have earned a grade of C or higher in each of the business Step 1 Admission courses:

BUSN 110	Introduction to Contemporary Business	1
ENGL 110C	English Composition	3
MATH 162M	Precalculus I	3
ACCT 201	Principles of Financial Accounting	3
ECON 202S	Principles of Microeconomics	3

BUSN 110 is not required for students pursuing the IT major or for any student with an associate's degree in business administration or with a prior bachelor's degree in business administration. Students may utilize the Grade Forgiveness Policy for the business Step 1 Admission courses.

Transfer students may complete business Step 1 Admission courses BUSN 110, ENGL 110C, MATH 162M, ACCT 201, and ECON 202S at another accredited college or university, but are responsible for having Transfer Evaluation Services determine that the courses are acceptable to the University. Transfer students with associate's degrees from Virginia community colleges that have articulated transfer agreements with ODU that do not require taking ENGL 110C must substitute ENGL 221C (or

ENGL 211C or ENGL 231C) for ENGL 110C in the list of business Step 1 Admission courses. All transfer students must have a transfer student evaluation completed by Transfer Evaluation Services to be used as documentation that the transfer courses are acceptable.

In addition to completing the business Step 1 Admission courses, students must have their resumes approved by the Career Management Center prior to submitting an application for Step 1 admission.

### Waiver of Eligibility Requirements to Enroll in Upper-Level Business Courses for Students Pursuing Step 1 Admission

Students with extenuating circumstances may petition the Strome College of Business Assistant Dean (Room 2004 Constant Hall) in writing for a one-time, one-semester waiver to the ban on enrollment in upper-level (300/400) business courses without Step 1 Admission to the bachelor's degree program in business administration. Waivers will be granted under the following conditions:

- The waiver has not been granted previously.
- The student must have successfully completed at least 42 credit hours applicable to the BSBA degree program.
- During the semester for which the waiver is granted, the student must enroll in all remaining business Step 1 Admission courses whose successful completion with a grade of C or better would allow normal Step 1 Admission to the bachelor's degree program in business administration.

### Appealing a Denial of Step 1 Admission to the Undergraduate Business Administration Program

Students who do not achieve a grade of C or higher in the business Step 1 Admission courses BUSN 110, ENGL 110C, MATH 162M, ACCT 201, and ECON 202S after utilizing the Grade Forgiveness Policy may appeal in writing to the Associate Dean of the Strome College of Business documenting the reasons why the student should be granted Step 1 Admission to the bachelor's degree program in business administration. The Associate Dean will review the student's other coursework to determine if the student has maintained an overall 2.00 grade point average in at least 25 semester hours or 42 quarter hours from Old Dominion University or an accredited institution of higher education. In this case, the requirement for a grade of C or better in each of the Step 1 Admission courses may, at the discretion of the Associate Dean, be waived.

### Admission to the Bachelor's Degree Program in Business Administration: Step 2

Students must first successfully complete Step 1 before undertaking the requirements for Step 2 Admission to the bachelor's degree program in business administration. Students must apply for Step 2 Admission to the program no later than the end of the semester in which they complete the following requirements:

- Earn an overall cumulative grade point average of at least 2.00 in all courses taken through Old Dominion University.
- Complete at least 12 hours of upper-level (300/400) courses through Old Dominion University, which must include at least six hours of upper-level courses from the Strome College of Business's Common Body of Knowledge (CBK) coursework. Note: students pursuing Step 2 admission will need a Program Restriction Waiver (PRW) to enroll in any 300/400 level business course. Forms to request a PRW are available on the CBPA website.
- Earn a 2.00 cumulative grade point average or higher in all upper-level courses taken through Old Dominion University.
- Earn a 2.00 cumulative GPA or higher in all Common Body of Knowledge (CBK) courses taken through Old Dominion University.

Students not meeting these requirements may wish to see the appeal procedures below.

## Appealing a Denial of Step 2 Admission to the Bachelor's Degree Program in Business Administration

Students who do not fulfill the requirements for Step 2 Admission, but who have at least a 2.00 cumulative grade point average in all of the business courses taken in the Strome College of Business at Old Dominion University, may appeal in writing to the Associate Dean of the Strome College of Business. The appeal must document the reasons why the student should be granted Step 2 Admission to the bachelor's degree program in business administration. In this case, the regular Step 2 Admission requirements may, at the discretion of the Associate Dean, be waived.

## Regulations for Continuance in the Bachelor of Science in Business Administration

In addition to the Old Dominion University continuance policies, the following policies are specific to all declared Bachelor of Science in Business Administration (BSBA) students. The Strome College of Business makes a reasonable effort to notify undergraduate students who are not in good academic standing in the BSBA program of their academic status. Each undergraduate student who is placed on BSBA Academic Alarm or BSBA Termination (explained below) will be sent an e-mail message to that effect at the student's Old Dominion University e-mail address, in accordance with the Electronic Messaging Policy for Official University Communication. Non-receipt of the e-mail messages by a student will not be considered grounds for granting exceptions or delays in enforcement of the BSBA continuance regulations.

### BSBA Continuance Regulations

At the end of each semester—fall, spring, and summer—the Strome College of Business reviews the records of all students who do not maintain at least a 2.00 cumulative grade-point average (GPA) in the BSBA Common Body of Knowledge (CBK) coursework and acts according to the following policies:

1. **BSBA Academic Alarm.** A student will be placed on BSBA Academic Alarm when the student's cumulative GPA in the CBK falls below 2.00 at the end of a semester, including summer terms. Consistent with the University continuance policy, a student on BSBA Academic Alarm may not enroll in more than 14 credit hours in fall and spring semesters, no more than six credits in the summer terms, and no more than one course in any single summer term. The enrollment limit may be waived under extenuating circumstances and with the permission of the Associate Dean of the CBPA. A student on Academic Alarm must achieve a cumulative GPA in the CBK of at least 2.00 at the end of the next semester of attendance to return to good BSBA academic standing. The student will continue on Academic Alarm each semester if the cumulative GPA in the CBK remains below 2.00, but the semester GPA in the CBK is 2.00 or above. Failure to achieve a semester GPA in the CBK of at least 2.00 will result in termination from the BSBA program. While on BSBA Academic Alarm, it is the student's responsibility to contact the College's Undergraduate Advising Office by email ([businessadvising@odu.edu](mailto:businessadvising@odu.edu)) in the first month of each semester to discuss the student's plan to return to good BSBA academic standing. Should a student decide not to enroll at the University for a semester or other period of time, his or her status will remain the same upon returning.
2. **BSBA Termination.** A student on BSBA Academic Alarm who fails to achieve a semester GPA in the CBK of at least 2.00 at the end of a fall or spring semester is terminated from the BSBA program. Upon BSBA termination, the student's major is changed from Business Administration to Undecided. These students are advised to contact the Center for Major Exploration. A student on BSBA Academic Alarm who fails to achieve a semester GPA in the CBK of at least 2.00 in a summer term will not be terminated but will continue in BSBA Academic Alarm status.

## Guidelines for Filing a BSBA Termination Appeal

1. All students have the right to appeal their BSBA termination if they feel that extraordinary circumstances were the main reason for their poor academic performance. All BSBA termination appeals must be submitted in writing to the Strome College of Business Associate Dean (Room 2004 Constant Hall) by the deadline posted on the Strome College of Business website: <http://bpa.odu.edu/continuance>. Late appeals will not be reviewed.
2. Appeals must be based on circumstances pertinent to the semesters in which the academic difficulty occurred that were beyond the control of the student and for which official withdrawal from the course(s) was not an option. Appeal letters must be legible and authored by the terminated student. The appeal letter must provide sufficient detail and explanation regarding the following points because there is no face-to-face meeting with the Strome College of Business Associate Dean. The decision of the Associate Dean is final. Students without documentation will not be allowed to appeal their termination. In order to be reviewed, an appeal letter must:
  - a. Document the extraordinary circumstances such as a death in the family, medical complications or chronic conditions, personal or family emergency, overwhelming work schedules, dorm-mate conflict, or a personal relationship conflict that have adversely affected performance: i.e., a statement or letter from a physician, employer, family members, faculty, academic advisor, Counseling Services, or Educational Accessibility.
  - b. Explain how the extraordinary circumstances caused each semester of poor academic performance.
  - c. State the reasons why an official withdrawal was not requested.
  - d. Explain how the extraordinary circumstance(s) has been resolved.
  - e. Provide a plan of action to return to good BSBA academic standing.
3. Students who do not file a BSBA termination appeal or whose appeals are denied are no longer eligible to pursue the bachelor's degree in Business Administration. Upon BSBA termination, the student's major is changed from Business Administration to Undecided. (This does not affect a declared second major outside of the BSBA.) These students are advised to contact the Center for Major Exploration.
4. BSBA-Terminated students who had pre-registered for a subsequent semester lose eligibility for continued enrollment in upper-level business courses.

### Applying for Readmission to the BSBA Program

After a minimum of five years has passed since a student was terminated from the BSBA program, the student may apply for readmission to the program. There must be a high probability the student will successfully complete the degree program, and approval will be at the discretion of the Strome College of Business Associate Dean.

The decision will be based on an evaluation of the student's transcript and on a written statement from the student explaining how circumstances that previously prevented the student from succeeding have changed in the intervening time period.

If readmitted, a student will be required to take all CBK courses, and their prerequisites, that have not been completed with a grade of C or better, and any other courses required for the student's degree program under the most recent Undergraduate Catalog.

If a student is readmitted, CBK course grades of C- or lower earned before termination will not be included in future CBK GPA calculations (though they will remain on the transcript).

## Degree Requirements

Students in all of the Bachelor of Science in Business Administration degree programs must fulfill the University General Education requirements (including foreign language) as well as the Strome College of Business's core, major, and elective requirements. Students must choose at least one major area to meet requirements towards the degree. The major areas are: accounting, decision sciences, economics, finance, international business,

information systems and technology, management, maritime and supply chain management, and marketing. Students majoring in international business must take the specific international business and regional courses that have been designated for their specific region.

To stay in compliance with AACSB accreditation standards, students receiving a Bachelor of Science in Business Administration from Old Dominion University must complete at least half of their business course work in residence with a minimum of four courses in the major. This equates to 10 business classes, thus meeting the University's residency requirement as well.

Majors in the college may not take business and public administration courses for pass/fail credit except those courses in which pass/fail is the only grading option (i.e., internships and practica).

No more than four hours of activity credit (used as free electives) may be applied to degree requirements for students majoring within the college.

## Competency in Oral and Written Communication

Competency in oral communication is demonstrated by the completion of COMM 101R, Public Speaking. Additionally, all students majoring in business administration can expect to complete several courses in which individual and/or group oral presentations will be required. The written competency is demonstrated by completion of ENGL 110C and ENGL 221C, Introduction to Writing in Business, Education and the Social Sciences (or ENGL 211C or ENGL 231C) with a grade of C or better.

## Upper-Level Writing Intensive Requirement

The upper-level writing intensive requirement in the business administration major is met with MGMT 485W. Students must earn a grade of C or better in MGMT 485W in order to graduate.

## Impact of Technology General Education Requirement

The Impact of Technology general education requirement is satisfied within each B.S.B.A. degree concentration except Information Systems and Technology by IT 360T. In the Information Systems and Technology concentration, the Impact of Technology requirement is satisfied by the coursework required for the concentration.

## Information Literacy and Research General Education Requirement

The information literacy and research general education requirement is demonstrated by the completion of IT 150G, Basic Information Literacy and Research.

## Philosophy and Ethics General Education Requirement

All business students will complete either PHIL 230E or an upper-level "E" course from the approved General Education ethics course list. A philosophy course designated with a "P" will not meet this requirement for business administration students with the exception of a "P" course taken prior to fall 2010.

## Advanced Placement

The college accepts advanced placement credit in accordance with the rules and regulations outlined in the Academic Information section of this catalog. Students may take College-Level Examination Program (CLEP) tests to receive credit for:

ACCT 201	Principles of Financial Accounting	3
ACCT 202	Principles of Managerial Accounting	3
ECON 201S	Principles of Macroeconomics	3
ECON 202S	Principles of Microeconomics	3

FIN 331	Legal Environment of Business	3
MGMT 325	Contemporary Organizations and Management	3
MKTG 311	Marketing Principles and Problems	3

Students are advised to contact the Office of Experiential Learning and Testing for more information regarding CLEP and other experiential learning credit options. For advanced placement credit in any other business or public administration course, students are advised to contact the chair of the department offering the course.

## Career Advantage Program in Business Administration

The college participates in the University's Career Advantage Program. Students may complement their major studies with a practical work experience, which may take the form of an internship, cooperative education experience or a class containing a real-world, hands-on project. Students must apply for internship or co-op participation through the Strome College of Business Career Management Satellite Office. All work experiences must be approved by the faculty sponsor in the appropriate department prior to registering for credit. Students may not earn credit for previous or current work experiences. (However, academic credit for work experience may be approved in accordance with the policies for granting experiential learning credit as defined in the section on Experiential Learning Credit Options at the Undergraduate Level in this catalog.) For details see the Career Management Center section of this catalog.

## Use of Internship and Similar Hours Toward Business Administration Majors

A student may apply no more than six hours of cooperative education, student internship or practicum courses to satisfy degree requirements. Students may not use more than three hours of cooperative education, student internship or practicum courses to satisfy major elective requirements in each of the student's majors. These courses are numbered 367, 368 or 369. Additional hours of cooperative education, student internship or practicum courses, however, can be used to satisfy other requirements such as free electives or general business electives. Additional internships must each involve substantially different kinds of work experiences. Internships must be approved by the Chief Departmental Advisor of the student's major and the CAP Coordinator of the internship.

## Transfer of the Associate of Science in Business Administration Towards Degree Requirements

Students transferring to the college must complete a minimum of 10 business courses offered by the college to earn the degree from Old Dominion University, in accordance with AACSB regulations. Those transfer students holding the Associate of Science in Business Administration degree from a Virginia Community College must earn the grade of "C" or better in the following courses in order to satisfy requirements found in the first two years of the B.S.B.A. degree:

COMM 101R	Public Speaking	3
IT 150G	Basic Information Literacy and Research	3
ENGL 221C	Introduction to Writing in Business, Education and Social Sciences	3
or ENGL 211C	English Composition	
or ENGL 231C	Introduction to Technical Writing	
MATH 162M	Precalculus I	3
MATH 200	Calculus for Business and Economics	3
ACCT 201	Principles of Financial Accounting	3
ACCT 202	Principles of Managerial Accounting	3
ECON 201S	Principles of Macroeconomics	3
ECON 202S	Principles of Microeconomics	3



BNAL 206	Probability, Decision Analysis and Business Statistics	3
Select one of the following:		3
PHIL 230E	Introduction to Ethics	
Upper-level ethics course		

With the exception of the courses listed above, the University's lower-division General Education requirements are deemed satisfied by the accepted A.S. degrees. These typically include all A.S. degrees from the Virginia Community College System except the applied science degrees. For more information about accepted A.S. degrees contact the Office of Admissions. Associate degree holders, although meeting lower-level General Education requirements, must ensure that 120 credits are completed to earn the B.S.B.A. degree. A minimum of 25% of the required credit hours must be completed through Old Dominion University, at least 12 of which are upper-level courses in the major program.

The Strome College of Business does not accept courses completed at the freshman and sophomore levels at other institutions for required courses at the junior and senior level at Old Dominion University. Please see the section on CLEP credits (Experiential Learning Credit Options at the Undergraduate Level) for additional information.

## Grade Average Requirements for Graduation

To graduate with a Bachelor of Science in Business Administration degree, students must present a minimum of 120 hours with a minimum overall grade point average of 2.00 in all courses taken at Old Dominion University. Students must also attain a minimum overall grade point average of 2.00 in courses taken toward the major (courses included in the major grade point average calculation are listed following the description of each major's course work).

Additionally, students must attain a minimum overall grade point average of 2.00 in the "Common Body of Knowledge" (CBK) listed below. Only courses completed at Old Dominion University will be used to compute the CBK average. Students with an IT major are not required to take IT 360T, so the CBK grade point average is computed using the remaining courses. If the CBK average is below the required 2.00 minimum, students are advised to utilize the Grade Forgiveness Policy or Adjusted Resident Credit option when appropriate to improve the grade point average.

## Requirements for Completing a Bachelor of Science in Business Administration

The following sections show the courses that are requirements for all business students, regardless of the chosen major: Lower-Division General Education, Common Body of Knowledge Courses, and Upper-Division General Education. Credit hours are listed after the course title. The student must also choose a major and complete the requirements listed for that major on the following pages.

### Foundation Courses for Admission to the Strome College of Business

ENGL 110C	English Composition (C or better)	3
MATH 162M	Precalculus I (C or better)	3
ACCT 201	Principles of Financial Accounting (C or better)	3
ECON 202S	Principles of Microeconomics (C or better)	3
BUSN 110	Introduction to Contemporary Business *	1

\* Not required for students pursuing the IT major or for students with an associate's degree in business administration or with a prior bachelor's degree in business administration.

See the section on Admission to the Undergraduate Program in Business Administration, General Requirements (p. 75).

## Lower Division General Education

COMM 101R	Public Speaking	3
ENGL 110C	English Composition	3
ENGL 221C	Introduction to Writing in Business, Education and Social Sciences (C or better)	3
or		
ENGL 221C	Introduction to Writing in Business, Education and Social Sciences (C or better)	
or		
ENGL 231C	Introduction to Technical Writing (C or better)	
Human Creativity Way of Knowing		3
Interpreting the Past Way of Knowing *		3
IT 150G	Basic Information Literacy and Research	3
Literature Way of Knowing		3
Nature of Science Way of Knowing I and II		8
Philosophy and Ethics Way of Knowing **		3
MATH 162M	Precalculus I	3
MATH 200	Calculus for Business and Economics	3
Language and Culture ***		6
Total Hours		44

\* There is a pre-determined history course for students majoring in International Business. Please see the International Business major course work for clarification.

\*\* Must be satisfied by completion of either PHIL 230E or an upper-level "E" course. A philosophy course designated with a P will not meet this requirement for business administration students with the exception of a "P" course taken prior to fall 2010.

\*\*\* There are several ways to satisfy the language and culture requirement. Please see the Catalog section labeled Requirements for Undergraduate Degrees, Lower-Division Requirements, Language and Culture for clarification.

Transfer students with an applicable associate's degree from a Virginia Community College or another community college that has a seamless transfer agreement with ODU, and students with a prior bachelor's degree from another university, must nevertheless have a grade of C or better in the following to be able to transfer them:

COMM 101R	Public Speaking	3
IT 150G	Basic Information Literacy and Research	3
ENGL 221C	Introduction to Writing in Business, Education and Social Sciences	3
or ENGL 211C	English Composition	
or ENGL 231C	Introduction to Technical Writing	
PHIL 230E	Introduction to Ethics (Or an upper-level ethics course)	3
MATH 162M	Precalculus I	3
MATH 200	Calculus for Business and Economics	3

## Common Body of Knowledge

ACCT 201	Principles of Financial Accounting *	3
ACCT 202	Principles of Managerial Accounting *	3
BNAL 206	Probability, Decision Analysis and Business Statistics *	3
BNAL 306	Statistical Data Analysis and Management Science	3
ECON 201S	Principles of Macroeconomics *	3
ECON 202S	Principles of Microeconomics *	3
ECON 301	Managerial Economics	3
FIN 323	Introductory Financial Management	3

FIN 331	Legal Environment of Business	3
IT 360T	Principles of Information Technology **	3
MGMT 325	Contemporary Organizations and Management	3
MGMT 485W	Business Policy and Strategy (C or better)	3
MKTG 311	Marketing Principles and Problems	3
OPMT 303	Operations Management	3
Total Hours		42

- \* Not automatically waived for transfer students with an applicable associate's degree from a Virginia Community College or another acceptable community college, or for students with a prior bachelor's degree from another university. A grade of C or better must be earned to transfer these courses to Old Dominion University.
- \*\* Students completing a major or minor in Information Systems and Technology do not take this course.

## Upper-Division General Education

- Option A. Any University-approved minor, second degree, or second major.\*
- Option B. An interdisciplinary minor consisting of 12 credits, three of which can be in the major. Interdisciplinary minors are described in the University Catalog section labeled Requirements for Undergraduate Degrees, Upper-Division Requirements.
- Option C. International business and regional courses or an approved certification program, such as teaching licensure.\*\*
- Option D. Two Upper-Division Courses from outside the Strome College of Business and not required by the major (6 credits).

\* Bachelor of Science in Business Administration students who pursue a minor or second major outside the Strome College of Business or in Economics, Military Leadership or Public Service fulfill Option A with no additional course work needed. Bachelor of Science in Business Administration students pursuing a minor or second major in the Strome College of Business other than Economics, Military Leadership (minor only) or Public Service (minor only) must also take six hours of 200-400 level courses outside the Strome College of Business, or in economics, or in military leadership or in study abroad. Students majoring in economics who pursue a minor or second major in the Strome College of Business fulfill the upper-division general education requirement and do not need to take the six hours of 200-400 level courses outside the Strome College of Business.

\*\* All International Business majors take international business and regional courses as specified within the major requirements. Please see the International Business major course work for further details.

## Business Elective

A business elective is a course that is offered by an accredited college of business, including the Strome College of Business at Old Dominion University. PAS courses offered by the Strome College of Business are not considered as business courses. However, because some business courses cannot be used to satisfy the requirements of certain majors, students must refer to their specific degree program requirements to make sure that they complete appropriate business elective courses. For example, ECON 200S cannot be used to satisfy an elective requirement for students majoring in business administration. Also, IT 360T cannot be used as an elective by students majoring in Information Systems and Technology. Refer to the course description section of this Catalog for full details of courses and their prerequisites.

## Free Elective

In the majority of cases a free elective is any course offered by an accredited community college or university, including Old Dominion University. However, because some courses cannot be used to satisfy the requirements of certain majors, students must refer to their specific degree program

requirements to make sure that they complete appropriate elective courses. For example, ECON 200S cannot be used to satisfy an elective requirement for students majoring in business administration. Also, IT 360T cannot be used as an elective by students majoring in Information Systems and Technology. Refer to the course description section of this Catalog for full details of courses and their prerequisites.

## Accelerated B.S.B.A./M.B.A. for Business Undergraduates

The accelerated B.S.B.A./M.B.A. is designed for well qualified ODU students pursuing the degree of Bachelor of Science in Business Administration to start their M.B.A. program prior to completing their undergraduate degree. Qualified students will be able to start taking M.B.A.-level courses as early as the second semester of their junior year. This will enable them to complete their undergraduate and M.B.A. degrees in approximately five years. Students interested in pursuing the accelerated program should carefully plan their undergraduate course of study considering the requirements of the program, as explained below.

### Admission Requirements

A potential candidate will have:

- Achieved a minimum GMAT score of 550
- Completed all lower-level general education requirements
- Completed at least 24 credit hours at ODU with a GPA of at least 3.0
- A minimum index of 1200 (index is computed as 200 times the ODU GPA plus GMAT score)

### Admissions Procedure

Students interested in the accelerated program should plan to take the GMAT at least two semesters prior to the semester in which they plan to enroll. Applications should be submitted to the M.B.A. Program Office at the beginning of one full semester (fall, spring) prior to planned enrollment.

Students interested in the program should discuss their plans with the M.B.A. program manager as early as possible. The M.B.A. program manager will act as their advisor. The M.B.A. Program Office is located in 1026 Constant Hall. The phone number is 683-3585.

### M.B.A. Core Courses

Admitted students may begin to complete up to 21 credits from the courses in the M.B.A. core (16 courses listed below) starting in the second semester of their junior year. A maximum of 21 graduate credits may be applied to the undergraduate degree. Of these 21 hours, up to 12 can be applied to both the undergraduate and graduate degrees. Students must maintain a 3.0 grade point average in these courses to continue in the program.

#### MBA Core

ACCT 609	Managerial Accounting	2
ACCT 611	Financial Accounting	2
BNAL 606	Statistics for Managers	2
BNAL 610	Fundamentals of Business Analytics	2
ECON 607	Managerial Economics	2
ECON 618	Global Macroeconomics	2
FIN 613	Financial Management	2
FIN 616	Investments and Portfolio Management	2
FIN 619	Business Law and Ethics	2
INBU 620	International Business Issues	2
IT 614	Information and Knowledge Management	2
MGMT 605	Essentials of Leadership	2
MGMT 612	Organizational Behavior	2
MKTG 608	Fundamentals of Contemporary Marketing	2
MKTG 617	Marketing Strategy	2

OPMT 615	Operations & Supply Chain Management	2
Total Hours		32

### Requirements for the M.B.A.

The entire program for a general M.B.A. is 40 credit hours for business majors. All courses will be available online and on main campus.

Students have to satisfactorily complete:

1. Undergraduate requirements and the 16 MBA core courses,
2. MGMT 621, and
3. Minimum of four hours of electives. Students may complete this requirement with any combination of 1, 2 or 3 credit hour classes to meet the minimum four credit requirement. Students may choose to add an additional credential with a choice of Graduate Certificates or related business degrees. Much of the coursework from the additional credentials can meet the elective requirements of the M.B.A. program as well as the program requirements of the selected certificate or degree program.

### Minor in Business Administration

A minor in business administration is available to students not receiving the Bachelor of Science in Business Administration degree. ACCT 201, ACCT 202, ECON 202S, and either BNAL 206 or STAT 130M must be completed as prerequisites for the minor and are not included in the calculation of the grade point average for the minor. Requirements for the minor are:

FIN 323	Introductory Financial Management	3
MGMT 325	Contemporary Organizations and Management	3
MKTG 311	Marketing Principles and Problems	3
IT 360T	Principles of Information Technology	3
OPMT 303	Operations Management	3
Total Hours		15

To receive a minor, the student must achieve a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of 200-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

### Minor in Public Service

The minor in public service is offered by the Department of Urban Studies and Public Administration. The purpose of the minor is to provide students with a solid theoretical foundation in the study and practice of public service, preparing students for citizenship, leadership, and careers in governmental and non-profit agencies. Students will achieve this goal by completing a series of courses from different disciplines across the University designed to provide a solid foundation in public administration and non-profit management, including an appreciation of both internal process and external environment of public and non-profit organizations. This minor will help prepare students for careers in public service and for graduate education in public administration, public affairs, and related fields.

#### Program Structure

The minor in public service consists of 12 hours of coursework. Students take six hours of core classes and six hours of elective courses. At least three hours of elective courses must be chosen from PAS 408, PAS 409, PAS 410, PAS 411 or PAS 395. The other three elective hours may be selected from the approved list of elective classes, taken upon the recommendation of the department and/or academic advisor. Students should seek the recommendation of their department and/or academic advisor as to the precise mix of elective courses taken. For completion of the minor, a student must have a minimum grade point average of 2.00 in all courses required for the minor exclusive of 200-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

Designated courses for the minor in public service are as follows:

#### Required Core

PAS 300	Foundations of Public Service	3
PAS 301	Ethics, Governance and Accountability in Public Service	3

#### Electives

PAS 408	Public Service Films	3
PAS 409	Leadership and Cultural Competence	3
PAS 410	Public and Non-profit Organization	3
PAS 411	Multi-Sector Partnerships for Public Service	3
PAS 368	Internship in Public Service	1-3
PAS 395	Selected Topics in Public Administration	3
PAS 497	Independent Study in Public Service	3
PHIL 410	Social and Political Philosophy	3
POLS 300	Introduction to Public Policy	3
POLS 309	Race, Culture and Public Policy	3
SOC 300	Social Problems	3
SOC 325	Social Welfare	3
CRJS 444	Community Justice	3
HMSV 441	Non-Profit Fund-Raising in Human Services	3

The following sections denote undergraduate course requirements for specific majors offered by the Strome College of Business. Most majors have free electives and business electives, which are also listed. Credit hours are listed after the course title.

## Bachelor of Science in Business Administration - Accounting Major

Douglas E. Ziegenfuss, Chair

Terry Kubichan, Chief Departmental Advisor

The study of accounting provides a basis for many government, nonprofit and business activities. A significant number of graduates use accounting to prepare them for a successful career in the public or private sectors. The undergraduate program in accounting at Old Dominion University is part of a select group in the country with separate accreditation from AACSB-International. The program provides a broad-based education with a variety of career objectives. The program provides students with technical accounting knowledge and the ability to analyze problems, communicate solutions, interact with colleagues, and successfully handle ethical issues.

#### Accounting Major Course Work

ACCT 301	Intermediate Accounting I *	3
ACCT 302	Intermediate Accounting II *	3
ACCT 311	Managerial Accounting *	3
ACCT 421	Taxation *	3
ACCT 460	Accounting Information Systems *	3
<b>ACCT Elective (select one of the following)</b>		<b>3</b>
ACCT 367	Cooperative Education	
ACCT 368	Student Internship	
ACCT 369	Practicum	
ACCT 405	Accounting and Auditing in the Public/ Nonprofit Sector	
ACCT 411	Financial Auditing	
ACCT 422	Federal Income Taxation of Individuals and Business Entities	
ACCT 450	International and Advanced Accounting **	
ACCT 495	Selected Topics in Accounting	
<b>International Business Requirement (select one of the following)</b>		<b>3</b>
ACCT 450	International and Advanced Accounting **	

ECON 450	International Economics	
FIN 435	International Financial Management	
IT 425	Information Systems for International Business	
MGMT 361	International Business Operations	
MGMT 462	Comparative International Management	
MGMT 463	Management Seminar Abroad	
MKTG 411	Multi-National Marketing	
MSCM 370	International Shipping	
Free Elective		3
300-400 Level Free Electives		9
Total Hours		33

\* A comprehensive assessment exam is given in ACCT 460 that covers the material from this course.

\*\* ACCT 450 cannot be used for both the ACCT elective and the International Business elective.

ECON 200S cannot be used for credit by students pursuing a degree in the Strome College of Business. ECON 200S cannot be used as a free elective.

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: all 300-400 level ACCT courses. Students must complete ACCT 301 with a grade of C or better and all other upper-division accounting courses with a grade of C- or better in order to graduate.

## Accounting Minor

A minor in accounting requires the completion of ACCT 301 with a grade of C or better and nine hours of 300- and/or 400-level accounting courses. All courses at the 300 and 400 levels must be preceded by listed prerequisites with:

ACCT 201 & ACCT 202	Principles of Financial Accounting and Principles of Managerial Accounting	6
or		
ACCT 226 & ACCT 227	Honors: Principles of Financial Accounting and Honors: Principles of Managerial Accounting	6
As prerequisites to:		
ACCT 301	Intermediate Accounting I	

Students may not take ACCT 367, ACCT 368 or ACCT 369 to satisfy the minor elective. To receive a minor, the student must achieve a minimum overall cumulative grade point average of 2.00 in all 300- and/or 400-level accounting courses required for the minor exclusive of 200-level courses and prerequisite courses. In addition, a grade of C- or better is required in all 300-and/or 400-level accounting courses counted toward the minor. A minimum of six hours in upper-level courses in the minor must be taken through courses offered by Old Dominion University.

## Fast-Track Undergraduate Admission

Undergraduate students majoring in accounting at Old Dominion University may apply for provisional status in the Master of Science in accounting program after completing ACCT 301, Intermediate Accounting I, with a minimum overall and accounting grade point average of 3.00. These students can then achieve regular admission status by completing their undergraduate degree with a minimum overall and accounting grade point average of 3.00 and obtaining an acceptable GMAT score.

## Bachelor of Science in Business Administration - Business Analytics Major

G. Steven Rhiel, Chair

Kelly Alvey, Chief Discipline Advisor

Business Analytics enables students to properly develop decision models and use computers to manipulate and analyze data in order to enhance decision making in a business environment. Students with a concentration in Business Analytics and Intelligence are typically employed in Business Analytics Departments. Students with Business Analytics concentrations in business functional areas are often employed in their functional area as analysts.

## Business Analytics and Intelligence Concentration

### Required Courses:

IT 201 or IT 360T	Introduction to Information Systems Principles of Information Technology	3
IT 210	Business Applications with C++	3
IT 361	Systems Analysis *	3
IT 410	Business Intelligence	3
IT 450	Database Concepts	3
BNAL 406	Spreadsheet Modeling and Analysis for Business Decisions	3
BNAL 407	Business Analysis	3
BNAL 415	Advanced Business Analytics/Big Data Applications	3
BNAL 432	Forecasting	3
BNAL 476	Simulation Modeling and Analysis for Business Systems	3

### Choose one of the following international courses:

ACCT 450	International and Advanced Accounting	
ECON 450	International Economics	
FIN 435	International Financial Management	
IT 425	Information Systems for International Business	
MGMT 361	International Business Operations	
MGMT 462	Comparative International Management	
MGMT 463	Management Seminar Abroad	
MKTG 411	Multi-National Marketing	
MSCM 370	International Shipping	
Free Elective		3
Total Hours		33

\* Business Analytics majors who take IT 361 will be exempt from taking IT 360T as a core course.

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are: IT 210, IT 450, IT 410, BNAL 406, BNAL 407, BNAL 415, BNAL 432, and BNAL 476.

## Business Analytics Concentrations in the Business Functional Areas

### Required Courses

BNAL 407	Business Analysis	3
BNAL 415	Advanced Business Analytics/Big Data Applications	3
BNAL 476	Simulation Modeling and Analysis for Business Systems	3

### Major Electives

Select one from the following:		3
BNAL 406	Spreadsheet Modeling and Analysis for Business Decisions	
BNAL 432	Forecasting	

<b>Select one from the following:</b>		3
ACCT 311	Managerial Accounting	
BNAL 368	Internship	
BNAL 406	Spreadsheet Modeling and Analysis for Business Decisions	
BNAL 432	Forecasting	
BNAL/MSCM 441	Supply Chain Management and Logistics	
ECON 400	Research Methods in Economics	
ECON 425	Introduction to Mathematical Economics	
FIN 413	Risk Analysis and Control	
FIN 431	Investments	
INBU 450	Global Business	
IT 473	Systems Design and Implementation	
MGMT 413	Compensation Management	
MKTG 407	Marketing Research	
MSCM 430	Strategic Sourcing and Purchasing Management	

### Concentration Area Electives

Choose and complete nine credits of coursework from one of the following concentration areas:

#### Business Analytics in Accounting

Two approved 300-400 level ACCT courses	6
Approved International Business Requirement	3
Select one from the following:	
ACCT 450	International and Advanced Accounting
ECON 450	International Economics
FIN 435	International Financial Management
IT 425	Information Systems for International Business
MGMT 361	International Business Operations
MGMT 462	Comparative International Management
MGMT 463	Management Seminar Abroad
MKTG 411	Multi-National Marketing
MSCM 370	International Shipping

#### Business Analytics in Economics

Two approved 300-400 level ECON courses	6
ECON 450	International Economics

#### Business Analytics in Finance

Two approved 300-400 level FIN courses	6
FIN 435	International Financial Management

#### Business Analytics in International Business

ECON 450	International Economics	3
FIN 435	International Financial Management	3
MKTG 411	Multi-National Marketing	3

#### Business Analytics in Information Technology \*

Two approved 400-level IT courses	6
Approved International Business Requirement	3

#### Business Analytics in Management

Two approved 300-400 level MGMT courses	6	
MGMT 361	International Business Operations	3
or MGMT 462	Comparative International Management	

#### Business Analytics in Marketing

Two approved 300-400 level MKTG courses	6	
MKTG 411	Multi-National Marketing	3

#### Business Analytics in Maritime and Supply Chain Management

Two approved MSCM courses	6	
MSCM 370	International Shipping	3

#### Electives

Free Elective	3
200-400 Level Business Elective **	3
300-400 Level Business Elective **	3
<b>Total Hours</b>	<b>33</b>

\* International Business Requirement for grade point calculation only. Note that only students who are also majoring in IT are permitted to use it as a functional area in the decision sciences major.

\*\* Can be any 200-400 or 300-400 level course offered by the Strome College of Business except ECON 200S, providing that the student has the appropriate prerequisites.

Courses included in the calculation of the 2.00 grade point average for major course work for graduation are: BNAL 407, BNAL 415, BNAL 476, 6 hours from major electives and 9 hours from functional area electives.

#### Business Analytics Minor

The minor in Business Analytics requires four courses (12 hours) comprised of:

BNAL 306	Statistical Data Analysis and Management Science	3
OPMT 303	Operations Management	3

**One of the following:** 3

BNAL 407	Business Analysis	
BNAL 476	Simulation Modeling and Analysis for Business Systems	

**One of the following:** 3

BNAL 407	Business Analysis	
BNAL 476	Simulation Modeling and Analysis for Business Systems	
BNAL 406	Spreadsheet Modeling and Analysis for Business Decisions	
BNAL 415	Advanced Business Analytics/Big Data Applications	

At least two of the four courses must be completed through courses offered by Old Dominion University, and a 2.00 overall grade point average is required exclusive of prerequisite courses. Business majors who want to make themselves more marketable may choose a minor in Business Analytics by taking two additional courses.

## Bachelor of Science in Business Administration - Economics Major

Christopher B. Colburn, Chair  
Eric Anderson, Chief Departmental Advisor

Economics is the study of how societies use their limited resources to produce wealth and how the distribution of the wealth among their members is determined. Knowledge of economics helps businesses and households understand how economic events will affect them, how they can best react to those events, and how to assess government economic policies. Majoring in economics is a springboard to a wide variety of careers in

business, government agencies, and not-for-profit organizations. A major in economics is also excellent preparation for law school and graduate study towards master's and doctoral programs in economics, business administration, public administration, urban studies, international studies, marine affairs, and other fields.

## Minimum Grade Requirements for Completion of the Major

For completion of a major in economics, a student must have a minimum overall cumulative grade point average of 2.00 in all 300-400 level economics courses taken except ECON 301 and ECON 436. Students must also earn a grade of C or better in ECON 201S and ECON 202S and must earn a grade of C- or better in all remaining 300-400 level ECON courses except ECON 301, in which a passing grade must be earned, and ECON 436, which does not count toward the major in economics.

### Economics major course work

Human Behavior Way of Knowing		3
ECON 304	Intermediate Microeconomic Theory	3
ECON 305	Intermediate Macroeconomic Theory	3
ECON 450	International Economics	3
Select three of the following ECON Electives:		9
ECON 368	Internship *	
ECON 369	Practicum in Economics *	
ECON 395/396	Topics in Economics	
ECON 400	Research Methods in Economics	
ECON 402	Transportation Economics	
ECON 407W	Labor Market Economics	
ECON 421	Public Economics	
ECON 425	Introduction to Mathematical Economics	
ECON 427	Industrial Organization and Public Policy	
ECON 431	Money and Banking	
ECON 435	Health Economics: A Global Perspective	
ECON 444	Development of the American Economy	
ECON 445W	Urban Economics	
ECON 447W	Natural Resource and Environmental Economics	
ECON 451	History of Economic Thought	
ECON 454W	Economic Development	
ECON 455	Comparative Economic Systems	
ECON 456	Economics of Information, the Internet and E-Commerce	
ECON 494	Federal Reserve Policy	
ECON 495	Selected Topics in Economics	
ECON 499	Readings in Economics	
Free Elective **		3
200-400 Level Free Elective **		3
300-400 Level Business Elective ***		6
<b>Total Hours</b>		<b>33</b>

\* No more than three credits of ECON 368 and/or ECON 369.

\*\* Excluding ECON 200S.

\*\*\* Can be any 300-400 level course offered by the Strome College of Business or transfer courses of a business or economics nature.

All upper-level economics courses taken are included in the grade point average in the major except ECON 301 and ECON 436 (ECON 436 does not count toward the major in economics).

### Economics Minor

A minor in economics requires the completion of 12 hours of 300- and/or 400-level economics courses. The 12 hours must include either ECON 304

or ECON 305, and may include both. The 12 hours may not include ECON 368, ECON 369 or ECON 436. All courses at the 300 and 400 levels must be preceded by listed prerequisites. For completion of the minor, a student must have a minimum overall cumulative grade point average of 2.00 in all economics courses exclusive of 100/200-level courses offered by Old Dominion University. In addition, students must earn a grade of C or better in ECON 202S and a grade of C- or better in every upper-level ECON course taken. Students must also earn a grade of C or better in ECON 201S if they wish to take ECON 305.

A minor in economics will fulfill the Upper-Division General Education requirements for all B.S.B.A. majors.

## Bachelor of Science in Business Administration - Finance Major

Mohammed Najand, Chair

John Griffith, Chief Departmental Advisor

The financial management major comprises four concentrations: finance, personal financial planning, real estate, and risk management and insurance. All satisfy the requirements listed below under one of the concentrations. Finance graduates are qualified for corporate financial management positions such as financial analysts, capital budgeting managers, credit managers, or cash control and risk managers; portfolio management positions like securities analysts, account executives, or portfolio manager/analysts; bank management positions include lending officers, marketing officers, or loan analysts; or entrepreneurs running their own businesses. Real estate graduates are employed as appraisers, sales and leasing agents, property managers, developers, and lending officers. Risk management and insurance graduates become underwriters, claims adjusters, and sales managers.

### Finance Major Course Work

FIN 317	Principles of Insurance and Risk Management	3
or FIN 319	Principles of Real Estate	
FIN 435	International Financial Management	3
FIN 431	Investments	3
FIN 432	Intermediate Financial Management	3
FIN 439	Financial Decision Making	3
Major Electives		9
Select one of the following:		
FIN 433	Introduction to Futures and Options	
FIN 434	Management of Financial Institutions	
FIN 441	Student Managed Investment Fund	
FIN 497	Selected Topics in Finance	
ACCT 301	Intermediate Accounting I	
or ACCT 311	Managerial Accounting	
ECON 431	Money and Banking	
Select two of the following:		
FIN 317	Principles of Insurance and Risk Management	
or FIN 319	Principles of Real Estate	
FIN 367	Cooperative Education	
FIN 368	Finance, Real Estate and Insurance Internship	
FIN 369	Finance, Real Estate and Insurance Internship	
FIN 410	Life and Health Insurance	
FIN 411	Employee Benefit Planning	
FIN 412	Property & Liability Insurance Company Operations	
FIN 413	Risk Analysis and Control	
FIN 433	Introduction to Futures and Options	
FIN 434	Management of Financial Institutions	

FIN 441	Student Managed Investment Fund	
FIN 450	Real Estate Finance	
FIN 454	Real Estate Investment Analysis	
FIN 497	Selected Topics in Finance	
ECON 421	Public Economics	
ECON 445W	Urban Economics	
ECON 450	International Economics	
ACCT 301	Intermediate Accounting I	
ACCT 311	Managerial Accounting	
Free Elective		3
200-400 Level Business Elective *		3
300-400 Level Business Elective **		3
Total Hours		33

\* Can be any 200-400 level course offered by the Strome College of Business except ECON 200S, providing that the student has the appropriate prerequisites.

\*\* Can be any 300-400 level course offered by the Strome College of Business, providing that the student has the appropriate prerequisites.

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are:

FIN 317	Principles of Insurance and Risk Management	3
or FIN 319	Principles of Real Estate	
FIN 435	International Financial Management	3
FIN 431	Investments	3
FIN 432	Intermediate Financial Management	3
FIN 439	Financial Decision Making	3
FIN Electives		9

### Finance major, Personal Financial Planning concentration course work

FIN 210S	Personal Financial Literacy	3
FIN 317	Principles of Insurance and Risk Management	3
FIN 411	Employee Benefit Planning	3
FIN 414	Estate Planning	3
FIN 415	Capstone in Financial Plan Development	3
FIN 431	Investments	3
FIN 435	International Financial Management	3
ACCT 421	Taxation	3
Select two of the following Major Electives:		6
FIN 319	Principles of Real Estate	
FIN 367	Cooperative Education	
FIN 368	Finance, Real Estate and Insurance Internship	
FIN 369	Finance, Real Estate and Insurance Internship	
FIN 410	Life and Health Insurance	
FIN 412	Property & Liability Insurance Company Operations	
FIN 433	Introduction to Futures and Options	
FIN 454	Real Estate Investment Analysis	
ACCT 422	Federal Income Taxation of Individuals and Business Entities	
Free Elective		3
Total Hours		33

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are:

FIN 210S	Personal Financial Literacy	3
FIN 317	Principles of Insurance and Risk Management	3
FIN 411	Employee Benefit Planning	3
FIN 414	Estate Planning	3
FIN 415	Capstone in Financial Plan Development	3
FIN 431	Investments	3
FIN 435	International Financial Management	3
ACCT 421	Taxation	3
Major Electives		6

### Finance major, Real Estate concentration course work

FIN 319	Principles of Real Estate	3
FIN 431	Investments	3
FIN 435	International Financial Management	3
FIN 450	Real Estate Finance	3
FIN 451	Real Estate Appraisal	3
FIN 454	Real Estate Investment Analysis	3
Select two of the following Major Electives:		6

ECON 445W	Urban Economics	
FIN 317	Principles of Insurance and Risk Management	
FIN 367	Cooperative Education	
FIN 368	Finance, Real Estate and Insurance Internship	
FIN 369	Finance, Real Estate and Insurance Internship	
FIN 412	Property & Liability Insurance Company Operations	
FIN 432	Intermediate Financial Management	
FIN 434	Management of Financial Institutions	
FIN 497	Selected Topics in Finance	
MKTG 404	Sales Management	
MKTG 407	Marketing Research	
MKTG 416	Professional Selling and Negotiations	
MGMT 451	Organizational Behavior	
CET 445	Construction Planning and Scheduling	
CET 460	Construction Cost Estimating	
CET 465	Construction Project Management	

Free Elective		3
200-400 Level Business Elective *		3
300-400 Level Business Elective **		3
Total Hours		33

\* Can be any 200-400 level course offered by the Strome College of Business except ECON 200S, providing that the student has the appropriate prerequisites.

\*\* Can be any 300-400 level course offered by the Strome College of Business, providing that the student has the appropriate prerequisites.

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are:

FIN 319	Principles of Real Estate	3
FIN 431	Investments	3
FIN 435	International Financial Management	3
FIN 450	Real Estate Finance	3

FIN 451	Real Estate Appraisal	3
FIN 454	Real Estate Investment Analysis	3
Major Electives		6

### Finance major, Risk Management and Insurance concentration course work

FIN 317	Principles of Insurance and Risk Management	3
FIN 435	International Financial Management	3
FIN 413	Risk Analysis and Control	3
FIN 443	Seminar in Insurance and Risk Management	3
Select four of the following Major Electives		12
FIN 367	Cooperative Education	
FIN 368	Finance, Real Estate and Insurance Internship	
FIN 369	Finance, Real Estate and Insurance Internship	
FIN 410	Life and Health Insurance	
FIN 411	Employee Benefit Planning	
FIN 412	Property & Liability Insurance Company Operations	
FIN 431	Investments	
FIN 433	Introduction to Futures and Options	
FIN 434	Management of Financial Institutions	
ACCT 311	Managerial Accounting	
Free Elective		3
200-400 Level Business Elective *		3
300-400 Level Business Elective **		3
Total Hours		33

\* Can be any 200-400 level course except ECON 200S, offered by the Strome College of Business, providing that the student has the appropriate prerequisites.

\*\* Can be any 300-400 level course offered by the Strome College of Business, providing that the student has the appropriate prerequisites.

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are:

FIN 317	Principles of Insurance and Risk Management	3
FIN 413	Risk Analysis and Control	3
FIN 435	International Financial Management	3
FIN 443	Seminar in Insurance and Risk Management	3
FIN Electives		12

### Financial Management, Real Estate, and Risk Management and Insurance Minors

A minor in financial management requires the completion of:

FIN 323	Introductory Financial Management	3
FIN 431	Investments	3
FIN 432	Intermediate Financial Management	3
Select two of the following:		6
FIN 433	Introduction to Futures and Options	
FIN 434	Management of Financial Institutions	
FIN 435	International Financial Management	
FIN 439	Financial Decision Making	
Total Hours		15

A minor in real estate requires the completion of:

FIN 319	Principles of Real Estate	3
FIN 450	Real Estate Finance	3
FIN 454	Real Estate Investment Analysis	3
Select two of the following:		6
FIN 431	Investments	
FIN 451	Real Estate Appraisal	
FIN 498	Selected Topics in Real Estate	
Total Hours		15

A minor in risk management and insurance requires the completion of:

FIN 317	Principles of Insurance and Risk Management	3
FIN 413	Risk Analysis and Control	3
FIN 443	Seminar in Insurance and Risk Management	3
Select two of the following:		6
FIN 410	Life and Health Insurance	
FIN 411	Employee Benefit Planning	
FIN 412	Property & Liability Insurance Company Operations	
FIN 431	Investments	
Total Hours		15

For completion of a minor, the student must achieve a minimum overall cumulative grade point average of 2.00 in all finance courses required or allowed toward the minor exclusive of prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Bachelor of Science in Business Administration - Information Systems and Technology Major

G. Steven Rhiel, Chair  
Li Xu, Information Technology Area Coordinator  
Roya Ardalan, Chief Discipline Advisor

The information systems and technology major is designed to provide students with a technical background in information technology as well as a broad perspective of the business environment in which information technology plays a strategic role. The major emphasizes the development of business analysis and system implementation skills; these skills can provide a basis for job entry, career development and flexibility amid the rapid changes in information technology. Three distinct concentrations are offered under the major.

### Information Systems and Technology major course work

IT 201	Introduction to Information Systems	3
IT 210	Business Applications with C++	3
IT 310	GUI Programming with C++	3
IT 317	Principles of Technology Architecture	3
IT 361	Systems Analysis	3
IT 415	Business Telecommunications and Networks	3
IT 450	Database Concepts	3
IT 464	Project Management in Information Systems	3
IT 473	Systems Design and Implementation	3
Select one of the following IT Electives:		3
IT 367	Cooperative Education	
IT 368	Student Internship	
IT 369	Practicum	



IT 410	Business Intelligence	
IT 416	Network Server Configuration and Administration	
IT 417	Management of Information Security	
IT 420	Object-Oriented Application Development Using Visual Basic	
IT 425	Information Systems for International Business *	
IT 430	Object-Oriented Programming with JAVA	
IT 451	Database Administration	
IT 453	Database Deployment and Performance Tuning	
IT 461	Implementing Internet Applications	
IT 474	Strategic IT Administration	
IT 495	Selected Topics in Information Systems	
IT 497	Independent Study in Information Systems	
Select one of the following Software Electives:		3
IT 372	COBOL and Applications	
IT 410	Business Intelligence	
IT 420	Object-Oriented Application Development Using Visual Basic	
IT 430	Object-Oriented Programming with JAVA	
IT 461	Implementing Internet Applications	
Select one of the following International Business Electives:		3
IT 425	Information Systems for International Business *	
ACCT 450	International and Advanced Accounting	
ECON 450	International Economics	
FIN 435	International Financial Management	
MGMT 361	International Business Operations	
MGMT 462	Comparative International Management	
MGMT 463	Management Seminar Abroad	
MKTG 411	Multi-National Marketing	
MSCM 370	International Shipping	
300-400 Level Business Elective **		3
Total Hours		39

\* IT 425 cannot be used as both the IT major elective and as the INBU elective.

\*\* Can be any 300-400 level course offered by the Strome College of Business, providing that the student has the appropriate prerequisites, except IT 360T.

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are:

IT 201	Introduction to Information Systems	3
IT 210	Business Applications with C++	3
IT 310	GUI Programming with C++	3
IT 317	Principles of Technology Architecture	3
IT 361	Systems Analysis	3
IT 415	Business Telecommunications and Networks	3
IT 450	Database Concepts	3
IT 451	Database Administration	3
IT 453	Database Deployment and Performance Tuning	3
IT 464	Project Management in Information Systems	3
IT 473	Systems Design and Implementation	3
Software elective		3

### Information Systems and Technology major, Database concentration course work

IT 201	Introduction to Information Systems	3
IT 210	Business Applications with C++	3
IT 310	GUI Programming with C++	3
IT 317	Principles of Technology Architecture	3
IT 361	Systems Analysis	3
IT 415	Business Telecommunications and Networks	3
IT 450	Database Concepts	3
IT 451	Database Administration	3
IT 453	Database Deployment and Performance Tuning	3
IT 464	Project Management in Information Systems	3
IT 473	Systems Design and Implementation	3
Select one of the following Software Electives:		3
IT 372	COBOL and Applications	
IT 410	Business Intelligence	
IT 420	Object-Oriented Application Development Using Visual Basic	
IT 430	Object-Oriented Programming with JAVA	
IT 461	Implementing Internet Applications	
Select one of the following International Business Electives:		3
IT 425	Information Systems for International Business	
ACCT 450	International and Advanced Accounting	
ECON 450	International Economics	
FIN 435	International Financial Management	
MGMT 361	International Business Operations	
MGMT 462	Comparative International Management	
MGMT 463	Management Seminar Abroad	
MKTG 411	Multi-National Marketing	
MSCM 370	International Shipping	
Total Hours		39

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are:

IT 201	Introduction to Information Systems	3
IT 210	Business Applications with C++	3
IT 310	GUI Programming with C++	3
IT 317	Principles of Technology Architecture	3
IT 361	Systems Analysis	3
IT 415	Business Telecommunications and Networks	3
IT 450	Database Concepts	3
IT 451	Database Administration	3
IT 453	Database Deployment and Performance Tuning	3
IT 464	Project Management in Information Systems	3
IT 473	Systems Design and Implementation	3
Software elective		3

### Information Systems and Technology major, Network Engineering concentration course work

IT 201	Introduction to Information Systems	3
IT 210	Business Applications with C++	3
IT 310	GUI Programming with C++	3
IT 317	Principles of Technology Architecture	3
IT 361	Systems Analysis	3
IT 415	Business Telecommunications and Networks	3

IT 416	Network Server Configuration and Administration	3
IT 417	Management of Information Security	3
IT 450	Database Concepts	3
IT 464	Project Management in Information Systems	3
IT 473	Systems Design and Implementation	3
Select one of the following Software Electives:		3
IT 372	COBOL and Applications	
IT 410	Business Intelligence	
IT 420	Object-Oriented Application Development Using Visual Basic	
IT 430	Object-Oriented Programming with JAVA	
IT 461	Implementing Internet Applications	
Select one of the following International Business Electives:		3
IT 425	Information Systems for International Business	
ACCT 450	International and Advanced Accounting	
ECON 450	International Economics	
FIN 435	International Financial Management	
MGMT 361	International Business Operations	
MGMT 462	Comparative International Management	
MGMT 463	Management Seminar Abroad	
MKTG 411	Multi-National Marketing	
MSCM 370	International Shipping	
Total Hours		39

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are:

IT 201	Introduction to Information Systems	3
IT 210	Business Applications with C++	3
IT 310	GUI Programming with C++	3
IT 317	Principles of Technology Architecture	3
IT 361	Systems Analysis	3
IT 415	Business Telecommunications and Networks	3
IT 416	Network Server Configuration and Administration	3
IT 417	Management of Information Security	3
IT 450	Database Concepts	3
IT 464	Project Management in Information Systems	3
IT 473	Systems Design and Implementation	3
Software elective		3

### Information Systems and Technology major, E-Business and E-Commerce concentration course work

IT 201	Introduction to Information Systems	3
IT 210	Business Applications with C++	3
IT 310	GUI Programming with C++	3
IT 317	Principles of Technology Architecture	3
IT 361	Systems Analysis	3
IT 415	Business Telecommunications and Networks	3
IT 450	Database Concepts	3
IT 461	Implementing Internet Applications	3
MKTG 450	Marketing on the Internet	3
BNAL/MSM 441	Supply Chain Management and Logistics	3
IT 464	Project Management in Information Systems	3
IT 473	Systems Design and Implementation	3
Select one of the following International Business Electives:		3

IT 425	Information Systems for International Business	
ACCT 450	International and Advanced Accounting	
ECON 450	International Economics	
FIN 435	International Financial Management	
MGMT 361	International Business Operations	
MGMT 462	Comparative International Management	
MGMT 463	Management Seminar Abroad	
MKTG 411	Multi-National Marketing	
MSCM 370	International Shipping	
Total Hours		39

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are:

IT 201	Introduction to Information Systems	3
IT 210	Business Applications with C++	3
IT 310	GUI Programming with C++	3
IT 317	Principles of Technology Architecture	3
IT 361	Systems Analysis	3
IT 415	Business Telecommunications and Networks	3
IT 450	Database Concepts	3
IT 461	Implementing Internet Applications	3
IT 464	Project Management in Information Systems	3
IT 473	Systems Design and Implementation	3
MKTG 450	Marketing on the Internet	3
BNAL 441	Supply Chain Management and Logistics	3
E-commerce elective		3

### Information Systems and Technology Minor

The minor in Information Systems and Technology is designed primarily for students completing the Bachelor of Science in Computer Science, the Bachelor of Science in Computer Engineering, or the Bachelor of Science in Engineering Technology (Computer Engineering). The courses in the minor have a number of technical prerequisites that are normally waived for those students who have completed CS 150, CS 250, and either CS 170 or ECE 241 or equivalent major course work.

Students must complete the following:

IT 361	Systems Analysis *	3
IT 450	Database Concepts **	3
IT 473	Systems Design and Implementation	3
Select three hours from the following:		3

IT 310	GUI Programming with C++	
IT 367	Cooperative Education *****	
IT 368	Student Internship *****	
IT 369	Practicum *****	
IT 372	COBOL and Applications	
IT 415	Business Telecommunications and Networks ***	
IT 420	Object-Oriented Application Development Using Visual Basic	
IT 425	Information Systems for International Business	
IT 430	Object-Oriented Programming with JAVA	
IT 461	Implementing Internet Applications	
IT 464	Project Management in Information Systems ****	
IT 474	Strategic IT Administration	

IT 495	Selected Topics in Information Systems	
Total Hours		12
*	ACCT 201 is a prerequisite for IT 361 and is not counted in the GPA calculation of the minor.	
**	Students completing CS 450 must substitute another course for IT 450 from the elective list.	
***	Computer Engineering and Computer Engineering Technology students completing CS 454 must substitute another course for IT 415 from the elective list.	
****	Students completing CS 410 must substitute another course for IT 464 from the elective list.	
*****	Students seeking an internship, cooperative education or practicum must obtain permission from both the IT internship coordinator as well as the internship coordinator of the students' major department.	

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of prerequisite courses. A minimum of six hours in upper-level courses in the minor must be taken through courses offered by Old Dominion University.

## Bachelor of Science in Business Administration - International Business Major

Bruce Seifert, Discipline Coordinator and Chief Discipline Advisor

A major in international business permits students to take an interdisciplinary approach to the study of global business. In addition to the core business and university requirements, all international business majors take specialized international courses in economics, finance, management and marketing.

Students also select an appropriate region: Europe, Latin America or East Asia. Unless they are already fluent in both English and another language, students will study and obtain a high level of competency in a foreign language appropriate for the region of interest. Students can opt to study a language other than French, Spanish, German, Chinese or Japanese. If Old Dominion does not offer all the required courses for this language, the student must find equivalent courses at other universities. The student must obtain written permission from the International Business discipline coordinator to take these courses at a particular university. The required courses for Europe and Latin America concentration areas are intermediate 1 and 2 and the business language course. For East Asia concentration areas the equivalent courses are the first 12 credit hours of the language. Students fluent in English and another language may fulfill the language requirement with an approved business minor (see discipline coordinator for information). Students must also study the culture and history of the specific region.

All students majoring in international business are required to participate in an approved study abroad program. International students are exempt from the study abroad requirement. However, these students are required to take an approved business minor. Exemptions need written approval of the discipline coordinator. Students can choose from an extensive list of sites abroad. International business students have recently studied in Denmark, England, Mexico, the Philippines and Korea.

International business students are encouraged to minor in a business functional area such as accounting, finance, marketing or management.

All international business students are required to take the international business and regional courses required for their region of the world.

### International Business major, East Asian concentration in Chinese course work

HIST 101H	Interpreting the Asian Past	3
POLS 100S	Introduction to International Politics	3

CHIN 111F	Beginning Chinese	6
CHIN 212	Intermediate Chinese	6
ECON 450	International Economics	3
FIN 435	International Financial Management	3
MKTG 411	Multi-National Marketing	3
INBU 433	Doing Business in Asia	3
INBU 450	Global Business	3
Select one of the following Major Electives:		3
ECON 454W	Economic Development	
ECON 455	Comparative Economic Systems	
INBU 367	Cooperative Education	
INBU 368	Internship in International Business	
INBU 434	International Trade Field Study	
INBU 463	International Business Seminar Abroad	
INBU 495	Topics in International Business	
IT 425	Information Systems for International Business	
MGMT 462	Comparative International Management	
MGMT 463	Management Seminar Abroad	
MSCM 370	International Shipping	
Select two of the International Asia Regional Courses:		6
ASIA 460	Major Issues in Asia	
GEOG 453	Asia	
HIST 332	South Asia Since Independence	
HIST 336	The Emergence of New China	
HIST 439	Politics and Society in East Asia Since 1945	
POLS 338W	Politics of East Asia	
POLS 437	International Relations in East Asia	
Total Hours		42

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are:

INBU 433	Doing Business in Asia	3
INBU 450	Global Business	3
ECON 450	International Economics	3
FIN 435	International Financial Management	3
MKTG 411	Multi-National Marketing	3
INBU Elective		3

### International Business Major, East Asian concentration in Japanese course work

HIST 101H	Interpreting the Asian Past	3
POLS 100S	Introduction to International Politics	3
BUSN 110	Introduction to Contemporary Business	1
JAPN 111F	Beginning Japanese	6
JAPN 212	Intermediate Japanese II	6
ECON 450	International Economics	3
FIN 435	International Financial Management	3
MKTG 411	Multi-National Marketing	3
INBU 433	Doing Business in Asia	3
INBU 450	Global Business	3
Select one of the following Major Electives:		3
ECON 454W	Economic Development	
ECON 455	Comparative Economic Systems	
INBU 367	Cooperative Education	
INBU 368	Internship in International Business	
INBU 434	International Trade Field Study	
INBU 463	International Business Seminar Abroad	
INBU 495	Topics in International Business	

IT 425	Information Systems for International Business	
MGMT 462	Comparative International Management	
MGMT 463	Management Seminar Abroad	
MSCM 370	International Shipping	
Select two of the following International Asia Regional Courses:		6
ASIA 460	Major Issues in Asia	
GEOG 453	Asia	
HIST 332	South Asia Since Independence	
HIST 336	The Emergence of New China	
HIST 439	Politics and Society in East Asia Since 1945	
POLS 338W	Politics of East Asia	
POLS 437	International Relations in East Asia	
Total Hours		43

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are:

INBU 433	Doing Business in Asia	3
INBU 450	Global Business	3
ECON 450	International Economics	3
FIN 435	International Financial Management	3
MKTG 411	Multi-National Marketing	3
INBU Elective		3

### International Business Major, European concentration course work

HIST 102H	Interpreting the European Past	3
POLS 100S	Introduction to International Politics	3
BUSN 110	Introduction to Contemporary Business	1
Foreign Language *		3
Foreign Language *		3
GER/FR/SPAN 366	Business German: Language and Culture	3
ECON 450	International Economics	3
FIN 435	International Financial Management	3
MKTG 411	Multi-National Marketing	3
INBU 431	Doing Business in Europe	3
INBU 450	Global Business	3
Select one of the following Major Electives		3
ECON 454W	Economic Development	
ECON 455	Comparative Economic Systems	
INBU 367	Cooperative Education	
INBU 368	Internship in International Business	
INBU 434	International Trade Field Study	
INBU 463	International Business Seminar Abroad	
INBU 495	Topics in International Business	
IT 425	Information Systems for International Business	
MGMT 462	Comparative International Management	
MGMT 463	Management Seminar Abroad	
MSCM 370	International Shipping	
300-400 Level Business Elective **		3
Select two of the following International European Regional Courses:		6
GEOG 451	Europe	
FLET 410	Berlin-Paris: Crucibles of European Ideas	
HIST 316	Cold War in History	
POLS 314	European Politics	

POLS 332W	Europe in World Affairs	
Total Hours		43

\* Language choices include: French, Spanish, German

\*\* Can be any 300-400 level course offered by the Strome College of Business with the exception of ECON 200S and MGMT 361, providing that the student has the appropriate prerequisites.

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are:

INBU 431	Doing Business in Europe	3
INBU 450	Global Business	3
ECON 450	International Economics	3
FIN 435	International Financial Management	3
MKTG 411	Multi-National Marketing	3
INBU Elective		3

### International Business Major, Latin American concentration course work

HIST 103H	Interpreting the Latin America Past	3
POLS 100S	Introduction to International Politics	3
BUSN 110	Introduction to Contemporary Business	1
SPAN 201	Intermediate Spanish I	3
SPAN 202	Intermediate Spanish II	3
SPAN 366	Business Spanish: Language and Culture	3
ECON 450	International Economics	3
FIN 435	International Financial Management	3
MKTG 411	Multi-National Marketing	3
INBU 432	Doing Business in Latin America	3
INBU 450	Global Business	3
Select one of the following Major Electives:		3

ECON 454W	Economic Development	
ECON 455	Comparative Economic Systems	
INBU 367	Cooperative Education	
INBU 368	Internship in International Business	
INBU 434	International Trade Field Study	
INBU 463	International Business Seminar Abroad	
INBU 495	Topics in International Business	
IT 425	Information Systems for International Business	
MGMT 462	Comparative International Management	
MGMT 463	Management Seminar Abroad	
MSCM 370	International Shipping	

300-400 Level Business Elective \* 3

Select two of the following International Latin America Regional Courses: 6

GEOG 454W	Latin America	
HIST 373	U.S.-Latin American Relations	
HIST 470	Democracy and Development in Modern Latin America	
HIST 372	Central America and the Caribbean Since 1800	
POLS 337	Latin American Politics	
SPAN 321	Latin American Culture and Civilization	

Total Hours 43

\* Can be any 300-400 level course offered by the Strome College of Business with the exception of ECON 200S and MGMT 361, providing that the student has the appropriate prerequisites.

Courses included in the calculation of the 2.00 overall grade point average for major course work for graduation are:

INBU 432	Doing Business in Latin America	3
INBU 450	Global Business	3
ECON 450	International Economics	3
FIN 435	International Financial Management	3
MKTG 411	Multi-National Marketing	3
INBU Elective		3

## International Business Minor

Students seeking the Bachelor of Science in Business Administration may also minor in international business by completing the following courses:

ECON 450	International Economics	3
FIN 435	International Financial Management	3
MKTG 411	Multi-National Marketing	3
Select one of the following:		3
INBU 431	Doing Business in Europe	
INBU 432	Doing Business in Latin America	
INBU 433	Doing Business in Asia	
INBU 450	Global Business	
MGMT 462	Comparative International Management	
MGMT 463	Management Seminar Abroad	
Total Hours		12

For completion of the minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of 100/200-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor through courses offered by Old Dominion University.

## Bachelor of Science in Business Administration - Management Major

Anil Nair, Chair and Chief Departmental Advisor

The management major is designed to develop a student's understanding of management as both an art and as a science along with those administrative skills necessary for positions of leadership and responsibility. The program recognizes that most students and managers will face several career changes and job choices following the first decade following graduation. The major provides students with a background in the principles and practices of management that will allow them to function in a variety of organizational environments.

For a major in management, all courses must be preceded by listed prerequisites. For completion of a major in management, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the major. In addition, a grade of C- or better is required in all management courses counted toward the major. A minimum of 12 hours in upper-level courses in the major must be taken through courses offered by Old Dominion University.

### Management major course work

MGMT 340	Human Resources Management	3
MGMT 361	International Business Operations	3
MGMT 451	Organizational Behavior	3
Select four of the following MGMT Electives:		12
MGMT 350	Employee Relations Problems and Practices	
MGMT 360	Labor Management Relations	
MGMT 367	Cooperative Education	
MGMT 368	Management Internship	
MGMT 369	Management Practicum	

MGMT 413	Compensation Management	
MGMT 417	Employment Law	
MGMT 418	Advanced Human Resources Management: Contemporary Issues	
MGMT 426	Entrepreneurship: New Ventures Creation	
MGMT 427	Business and Society	
MGMT 452	Organization Development	
MGMT 462	Comparative International Management	
MGMT 463	Management Seminar Abroad	
MGMT 495	Selected Topics in Management	
200-400 Level Free Elective		3
300-400 Level Free Elective		3
Free Electives		6
Total Hours		33

All 300-400 level MGMT courses, except for MGMT 325 and MGMT 485W, are included in the calculation of the 2.00 overall grade point average for major course work for graduation.

## Management Minor

A minor in management requires the completion of MGMT 325 plus 12 hours of 300- or 400-level management courses except for MGMT 485W. All courses selected must be preceded by listed prerequisites. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of prerequisite courses. In addition, a grade of C- or better is required in all management courses counted toward the minor. A minimum of six hours in upper-level courses in the minor must be taken through courses offered by Old Dominion University.

## Bachelor of Science in Business Administration - Maritime and Supply Chain Management Major

G. Steven Rhiel, Chair

Ling Li, Area Coordinator

Sara Russell-Riggs, Chief Discipline Advisor

The maritime and supply chain management major is designed to provide students with an integrated working knowledge of maritime operations and supply chain management. It is the only undergraduate major of its kind east of the Mississippi River and graduates will be able to meet the needs of regional, national and international shipping, transportation and distribution industries. Students may choose either the maritime management concentration or supply chain management concentration.

### Maritime Management Concentration Coursework

MSCM 370	International Shipping	3
MSCM/BNAL 441	Supply Chain Management and Logistics	3
MSCM 471	Shipping Management	3
MSCM 472	Port Management	3
MSCM 473	Inland Waterway and Intermodal Transportation	3
Select three of the following Major Electives:		9
MSCM 430	Strategic Sourcing and Purchasing Management	
ECON 402	Transportation Economics	
BNAL 406	Spreadsheet Modeling and Analysis for Business Decisions	
BNAL 407	Business Analysis	
BNAL 432	Forecasting	
BNAL 476	Simulation Modeling and Analysis for Business Systems	

BNAL 497	Independent Study	
ACCT 311	Managerial Accounting	
FIN 435	International Financial Management	
MGMT 360	Labor Management Relations	
MSCM 368	Maritime and Supply Chain Internship	
MSCM 415	Maritime Security and Risk Analysis	
MSCM 495	Topics in Maritime and Supply Chain Management	
MSCM 497	Independent Study	
OPMT 367	Cooperative Education	
OPMT 368	Student Internship	
OPMT 369	Practicum	
OPMT 495	Selected Topics in Operations Management	
OPMT 497	Independent Study in Operations Management	
Free Electives		3
300-400 Level Business Elective *		6
<b>Total Hours</b>		<b>33</b>

\* Can be any 300-400 level course offered by the Strome College of Business, providing that the student has the appropriate prerequisites.

Courses included in the calculation of the 2.00 overall grade point average for maritime management concentration coursework for graduation are:

MSCM 370	International Shipping	
MSCM/BNAL 441	Supply Chain Management and Logistics	
MSCM 471	Shipping Management	
MSCM 472	Port Management	
MSCM 473	Inland Waterway and Intermodal Transportation	
All 300-400 Level MSCM/BNAL/OPMT elective courses		

### Supply Chain Management Concentration Coursework

MSCM 370	International Shipping	3
MSCM/BNAL 441	Supply Chain Management and Logistics	3
MSCM 430	Strategic Sourcing and Purchasing Management	3
MSCM 439	Quality Management	3
MSCM 468	Distribution Center and Material Handling Management	3
Select three of the following Major Electives		9
MSCM 471	Shipping Management	
MSCM 472	Port Management	
MSCM 473	Inland Waterway and Intermodal Transportation	
BNAL 406	Spreadsheet Modeling and Analysis for Business Decisions	
BNAL 407	Business Analysis	
BNAL 432	Forecasting	
BNAL 476	Simulation Modeling and Analysis for Business Systems	
BNAL 497	Independent Study	
ACCT 311	Managerial Accounting	
ECON 402	Transportation Economics	
MSCM 368	Maritime and Supply Chain Internship	
MSCM 495	Topics in Maritime and Supply Chain Management	
MSCM 497	Independent Study	
OPMT 367	Cooperative Education	

OPMT 368	Student Internship	
OPMT 369	Practicum	
OPMT 495	Selected Topics in Operations Management	
OPMT 497	Independent Study in Operations Management	
Free Electives		3
300-400 Level Business Electives *		6
<b>Total Hours</b>		<b>33</b>

\* Can be any 300-400 level course offered by the Strome College of Business, provided the student has the appropriate course prerequisites.

Courses included in the calculation of the 2.00 overall grade point average for supply chain management concentration coursework for graduation are:

MSCM 370	International Shipping	
MSCM/BNAL 441	Supply Chain Management and Logistics	
MSCM 430	Strategic Sourcing and Purchasing Management	
MSCM 439	Quality Management	
MSCM 468	Distribution Center and Material Handling Management	
All 300-400 level MSCM/BNAL/OPMT elective courses.		

### Maritime and Supply Chain Management Minor

A minor in maritime and supply chain management requires the completion of 12 hours of 300- and/or 400-level maritime and supply chain management courses. All courses selected must be preceded by listed prerequisites. The minor requires completion of:

OPMT 303	Operations Management *	3
MSCM 370	International Shipping	3
or		
MSCM 441	Supply Chain Management and Logistics *****	
Select two of the following		6
MSCM 370	International Shipping	
MSCM 415	Maritime Security and Risk Analysis ***	
MSCM 430	Strategic Sourcing and Purchasing Management ****	
MSCM 439	Quality Management *****	
MSCM 441	Supply Chain Management and Logistics *****	
MSCM 468	Distribution Center and Material Handling Management *****	
MSCM 471	Shipping Management ***	
MSCM 472	Port Management ***	
MSCM 473	Inland Waterway and Intermodal Transportation ***	
MSCM 495	Topics in Maritime and Supply Chain Management	
MSCM 497	Independent Study	
<b>Total Hours</b>		<b>12</b>

#### Prerequisite Courses

- \* BNAL 206 or STAT 130M or equivalent
- \*\* BNAL 306 and OPMT 303
- \*\*\* MSCM 370
- \*\*\*\* ACCT 202, BNAL 206, OPMT 303

\*\*\*\* OPMT 303

\*\*\*\*\* MSCM 441/BNAL 441

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of prerequisite courses. A minimum of six hours in upper-level courses in the minor must be completed through courses offered by Old Dominion University.

## Bachelor of Science in Business Administration - Marketing Major

Yuping Liu-Thompkins, Chair

Michelle Carpenter, Co-Chief Departmental Advisor

Roslyn Houston, Co-Chief Departmental Advisor

Marketing is more than just buying and selling. Marketing is part of almost any transaction that occurs between people and organizations. Each party has objectives and goals it would like to realize. The marketing task is to facilitate the transaction so that these objectives are met. The principal objective of this major is educating students to be ethical and successful in today's and tomorrow's dynamic global marketing environment.

For completion of a major in marketing, a student must have a minimum overall cumulative grade point average of 2.00 in all courses taken toward the major. In addition, a grade of C- or better is required in all marketing courses counted toward the major.

### Marketing Major course work

MKTG 402	Consumer Behavior	3
MKTG 407	Marketing Research	3
MKTG 411	Multi-National Marketing	3
MKTG 490	Marketing Policy and Strategy	3
Select four of the following MKTG Electives:		12
MKTG 367	Cooperative Education	
MKTG 368	Marketing Internship	
MKTG 369	Practicum	
MKTG 403	Advertising Strategy	
MKTG 404	Sales Management	
MKTG 406	Public Relations	
MKTG 412	Retail Marketing	
MKTG 414	Ethics and Social Issues in Administration	
MKTG 416	Professional Selling and Negotiations	
MKTG 428	Marketing of Services	
MKTG 450	Marketing on the Internet	
MKTG 496	Selected Topics in Marketing	
200-400 Level Free Elective		3
Free Electives		6
Total Hours		33

All 300-400 level MKTG courses, except for MKTG 311, are included in the calculation of the 2.00 overall grade point average for major course work for graduation.

### Marketing Minor

A minor in marketing requires the completion of MKTG 311 plus 12 hours of 300/400-level marketing courses. All courses selected must be preceded by listed prerequisites. For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of prerequisite courses. In addition, a grade of C- or better is required in all marketing courses counted toward the minor. A minimum of six hours in upper-level courses in the minor must be taken through courses offered by Old Dominion University.

## Military Science and Leadership (Army Reserve Officers' Training Corps)

Brian D. Kerns, Chair

The Department of Military Science and Leadership offers courses that develop a student's ability to organize, motivate, and lead others. Although some military science graduates choose a career with the U.S. Army, many use their Army leadership and management experiences as a springboard for successful careers as entrepreneurs, corporate officers and managers, attorneys, and governmental executives. A variety of social and professional enrichment activities as well as adventure training opportunities are also available to students. Scholarships are available on a competitive basis.

The Army ROTC program is administratively located under the Director of Military Activities and is situated, for academic matters, within the Strome College of Business.

### Mission

The mission of the Department of Military Science and Leadership is to commission the future officer leadership of the U.S. Army. The Old Dominion University Army ROTC program consists of structured study in the field of military science with the primary objective of developing leaders who will serve as commissioned officers in the U.S. Army Active and Reserve components. Students develop maturity, responsibility, and dependability while earning the Gold Bar of an Army Second Lieutenant.

### Requirements

Army ROTC offers two different programs to all qualified university students. The traditional four-year program gives students the opportunity to take AROTC courses in each of their four years of college. The two-year program is available for any students who did not take ROTC during their first two years of college. There is no service obligation until students reach their junior year of college.

### Four-Year Program

#### Basic Course

Military Science Level I		2
MSL 101+	Introduction to ROTC	
MSL 102+	Introduction to Leadership	
or		
MSL 195	Independent Study of Selected Military Topics	
MSL 196	Independent Study of Selected Military Topics	
Military Science Level II		2-6
MSL 201+	Leadership Skills II	
MSL 202+	Foundations of the Military Profession	
or		
MSL 295	Independent Study of Selected Military Topics	
MSL 296	Independent Study of Selected Military Topics	
MSL 250+	Alternate Summer Training Program: Leaders Training Course (LTC)	

#### Advanced Course

Military Science Level III		12
MSL 301	Advanced Leadership Skills	3
MSL 395	Independent Study	3
or MSL 311+	Advanced Leadership Skills III Lab	
MSL 302	Applied Leadership	3
MSL 396	Independent Study	3
or MSL 312+	Applied Leadership Lab	

<b>Military Science Level IV</b>		12
MSL 401	Military Leadership and Management	
MSL 495	Independent Study	
or MSL 411+	Senior Military Leadership and Management Laboratory	
MSL 402	Officership	
MSL 496	Independent Study	
or MSL 412+	Senior Leadership Laboratory	
Total Hours		40-44

Veterans and members of the Reserve or National Guard may be able to waive the Basic Course requirements.

## Two-Year Program

MSL 250+ (Basic Camp Leader's Training Course) and the Advanced Course listed above. Attendance at Leader's Training Course (not to be confused with the Basic Training) satisfies the Basic Course requirements.

## Scholarships

Students may compete for four-, three-, and two-year scholarships that pay full tuition and gradually increasing stipend and book allowance annually. Nursing scholarships are plentiful for qualified applicants.

## Summer Training

Students may compete for Airborne, Air Assault, and other training during the summer. Third-year ROTC students may compete for Cadet Troop Leadership slots to various locations in the United States and overseas. All Advanced Course cadets attend the Leadership Development and Assessment Course (LDAC) before or after their senior year.

## Minor in Military Leadership

The minor in military leadership is a high quality, interdisciplinary, multidimensional, experiential, and culturally diverse program that exposes students to, and prepares them for, real life leadership opportunities and challenges. Students explore issues of leadership, citizenship, and social change within the context of an inquiry, experiential, and competency-based instructional design. The minor is open to all students who have completed the prerequisite courses. Students who are not enrolled in the military science or naval science program will receive academic credit for the minor but will not receive credit for commissioning purposes.

The requirements for students in the Military Science and Leadership Department are completion of:

MSL 301	Advanced Leadership Skills	3
MSL 302	Applied Leadership	3
MSL 401	Military Leadership and Management	3
MSL 402	Officership	3
Select one of the following:		3
ENMA 301	Introduction to Engineering Management	
ENMA 401	Project Management	
ENGL 435W	Management Writing	
HIST 360	American Military History	
HIST 408	War and American Society in the Twentieth Century	
MGMT 325	Contemporary Organizations and Management	
MGMT 340	Human Resources Management	
NURS 480W	Leadership and Management	
PHIL 441	Foundations of Ethics	
PHIL 442E	Studies in Applied Ethics	
POLS 326W	American Foreign Policy	
POLS 327W	Politics of National Security	
POLS 350T	Technology and War	

POLS 421	International Law	
PSYC 343	Personnel Psychology	
PSYC 345	Organizational Psychology	
SOC 352	War and Peace	
Total Hours		15

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of 100/200-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.



# Darden College of Education

## Darden College of Education

Jane S. Bray, Dean

Gail Dickinson, Associate Dean, Graduate Programs and Research

Robert J. Spina, Associate Dean, Undergraduate Education and Assessment

Leigh Butler, Assistant Dean, Teacher Education Services and Advising

The Darden College of Education is comprised of the following departments: Communication Disorders and Special Education; Counseling and Human Services; Educational Foundations and Leadership; Human Movement Sciences; Science, Mathematics, Engineering and Technology (STEM) Education and Professional Studies; and Teaching & Learning.

### Mission

The Darden College of Education is committed to excellence in teaching, scholarly activities, and service in the context of a diverse student body, faculty, community, Commonwealth of Virginia, the nation, and world. The college strives to accomplish its goals of excellence by meeting the educational needs of these communities through the achievement of national and international prominence in the disciplines of the college and through the preparation of outstanding educators, leaders, and professionals.

### Vision

The Darden College of Education will become known as one of the top 50 colleges of education in the country and will increase its rankings in national opinion surveys by focusing its resources to achieve:

- collaboration among departmental, college, and University colleagues and with professional colleagues throughout the world;
- adherence to the highest standards of professionalism and by gaining prominence in the professions; and
- a reputation for innovation in teaching, research, and service in the preparation of teachers and other professionals, leaders, and scholars as the college meets the needs of Hampton Roads, the Commonwealth of Virginia, nation, and world.

The commitment to the college's mission and this vision add value to the academic degree programs of the college, the research and scholarly activities, and the service to the community, Commonwealth of Virginia, nation, and world.

### Purpose for Teacher Education

Old Dominion University's major purpose in its teacher education programs is to prepare teachers and educational leaders who have knowledge of their teaching disciplines, abilities to practice state-of-the-art instruction to students of various cultural and socioeconomic backgrounds, and demonstrate dispositions which reflect commitment to teaching and learning as well as lifelong professional growth and development.

### Goals for Teacher Education

The teacher preparation programs embrace several broad goals. Candidates will possess the following:

1. Knowledge of their teaching field(s)
2. Pedagogical knowledge of principles and strategies which pertain to classroom organization and instructional practices
3. Knowledge of curricular content, classroom organization, instructional materials, and instructional technology
4. Knowledge of learners' developmental characteristics and diversity
5. Knowledge of educational contexts, ranging from group dynamics in classrooms, to the governance and financing of school divisions, to the characteristics and expectations of communities which schools serve
6. Knowledge of educational values, purposes, ends, history, and philosophies which pertain to schooling in a democracy

7. Ability to conduct research and utilize research findings in decisions to improve long-range planning, school operation and student learning.

All education programs are accredited by the National Council for the Accreditation of Teacher Education (NCATE). Teacher licensure programs are also approved by the Department of Education of the Commonwealth of Virginia.

The graduate programs provide Virginia and other regions with ten broad majors for the Master of Science in Education, three majors in the Master of Science, two majors for the Education Specialist, and 11 majors for the Doctor of Philosophy. Within these graduate majors are over 40 related interest areas designed to address the professional needs of students and the communities they serve. The prime objective of graduate programs is to improve the professional skills and attitudes of students to enable them to influence the quality of education (teaching, leadership, counseling, research, training, and community services) at the state, regional, national, and international levels.

### Portfolio Assessment Policy

All individuals seeking admission into any teacher education program are required to purchase the Web-based Portfolio Assessment System approved by the Teacher Education Council upon enrolling/registering for their first education class. In addition, any student taking a course in which the instructor requires the Web-based Portfolio Assessment System will be required to purchase this system. Information can be found on the Darden College of Education website: [www.education.odu.edu](http://www.education.odu.edu).

### Fast Track Graduate Admission Policy

Fast Track graduate admission is available to undergraduate students completing an approved teacher preparation program at Old Dominion University. Students completing the Bachelor of Science Interdisciplinary Studies Teacher Preparation concentration may apply to an M.S.Ed. program in Early Childhood Prek-3, Elementary Education Prek-6, or Special Education. Candidates who complete their baccalaureate degree with initial licensure in art, dance, English, foreign language, history/social studies, marketing education, mathematics, music, health and physical education, biology, Earth science, physics, chemistry, technology education, and/or theatre may apply to an M.S.Ed. program for licensed teachers.

To be considered for Fast Track, candidates must meet the following criteria:

1. Have an overall minimum 3.30 undergraduate cumulative GPA at Old Dominion University; and
2. Have passing scores on EACH of the three sections of the Praxis I exam (reading 178, writing 176, and math 178 by December 31, 2013 – (composite scores will not be considered) or;
3. Have passing Praxis Core Academic Skills Tests beginning January 1, 2014: Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; or
4. Have approved substitute test scores:
  - a. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  - b. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
  - c. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
  - d. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**

The Praxis/VCLA score combination is not an approved option for Fast Track Graduate Admission.

## Licensure and Baccalaureate Degree Requirements

The Darden College of Education offers teacher preparation programs as well as non-teaching programs in human services, exercise science, sport management, speech-language pathology and audiology, park, recreation and tourism studies, fashion merchandising, industrial technology, and training specialist. Teacher preparation programs focus on the acquisition of competence in the following areas:

1. Subject matter
2. Preparing and presenting instruction
3. Diagnosing and assessing student achievement
4. Recognizing individual differences with respect to cultural diversity and the spectrum of exceptionalities
5. Implementing a sound philosophy of education based on an understanding of the foundations of American education
6. Building and maintaining an effective classroom environment.

Program sheets are available in the Office of Teacher Education Services and appropriate departmental offices in the Colleges of Arts and Letters, Education, and Sciences. Students who wish to teach the disciplines of art, biology, chemistry, computer science, dance, Earth science, physics, English, foreign languages, music, mathematics, social studies, and theatre must pursue appropriate majors in either the College of Arts and Letters or the College of Sciences. (See the College of Arts and Letters and the College of Sciences sections of this Catalog.) Students interested in teaching early childhood education, elementary education, or middle school must pursue a major in interdisciplinary studies through the College of Arts and Letters and a fifth year leading to a master's degree in elementary education or early childhood education through the Darden College of Education. Special education teacher candidates earn full licensure to teach special education general curriculum, K-12, with the completion of the B.S. degree with a major in Interdisciplinary Studies Teacher Preparation, Special Education Emphasis (see the College of Arts and Letters section of this Catalog) and courses in the Darden College of Education. Additionally, special education teacher candidates will be highly qualified to teach:

1. Elementary education or
2. Secondary English and elementary education.

(For education course requirements in these areas, see the Department of Teaching & Learning (<http://catalog.odu.edu/undergraduate/dardencollegeofeducation/teachinglearning>) and the Department of Communication Disorders and Special Education (<http://catalog.odu.edu/undergraduate/dardencollegeofeducation/communicationdisordersspecialeducation>) sections of this Catalog.) Students interested in speech-language pathology and audiology must also complete a master's degree in that area. Students interested in teaching marketing education, technology education, or health and physical education must pursue a major in the discipline. (For details, see the Department of STEM Education and Professional Studies (<http://catalog.odu.edu/undergraduate/dardencollegeofeducation/stemeducationprofessionalstudies>) or the Department of Human Movement Sciences (<http://catalog.odu.edu/undergraduate/dardencollegeofeducation/humanmovementsscience>) sections of this Catalog.)

## Post-Baccalaureate Endorsement Teacher Education Programs

### Policy

Many students already possessing an undergraduate degree enter Old Dominion University for the sole purpose of meeting Virginia's teaching licensure standards. When these students apply for admission into an approved teacher education program, they are considered to be "post-baccalaureate endorsement" candidates and must meet the college's policy for admitting students into an approved teacher education program. Admission to Old Dominion University does not guarantee admission

into degree and/or teacher preparation programs in the Darden College of Education.

### Procedure

Students seeking regular admission into the post-baccalaureate endorsement program must:

1. apply for admission to Old Dominion University as a non-degree seeking graduate student;
2. have achieved a cumulative GPA of 2.75 for all college credit courses taken in the baccalaureate degree program
3. have achieved all grades in the content of C or C- (as determined by the related department);
4. achieve passing Praxis I or the Prescribed Virginia Board of Education Assessment for admission to an approved teacher education program substitute test score for Praxis I described in this section of the catalog;
5. interview with and receive recommendation for admittance from a department representative, Teacher Education Services advisor, or site director
6. submit an application for admittance into the Darden College of Education post-baccalaureate endorsement program. Only 12 hours of professional education courses from another institution may transfer into a post-baccalaureate endorsement program. Practicum and/or student teaching courses are not eligible for transfer.
7. complete the professional dispositions self-survey
8. provide authorization for the release of any disciplinary action that is contained in the student records

Students who do not meet regular admission requirements may meet provisional admission into the post-baccalaureate endorsement program. For provisional status, a student must:

1. apply for admission to Old Dominion University as a non-degree seeking graduate student;
2. have achieved a cumulative GPA of 2.50-2.74 for all college credit courses taken in the baccalaureate degree program;
3. have achieved all grades in the content of C or C- (as determined by the related department);
4. achieve passing Praxis I or the Prescribed Virginia Board of Education Assessment for admission to an approved teacher education program substitute test score for Praxis I described in this section of the catalog;
5. interview with and receive recommendation for admittance from a department representative, Teacher Education Services advisor, or site director
6. submit an application for admittance into the Darden College of Education Teacher post-baccalaureate endorsement program
7. provide authorization for the release of any disciplinary action that is contained in the student records.

Students who wish to apply to a graduate program while in the post-baccalaureate endorsement program must meet all graduate program entry requirements. Additionally, a maximum of 12 hours from a post-baccalaureate endorsement program will transfer into a graduate program.

In order to student teach and complete all approved teacher education program requirements, attain passing scores on the Praxis II exam, the Virginia Communication and Literacy Assessment (VCLA) and when appropriate the Virginia Reading Assessment, the VRA or RVE, or the current Virginia Board of Education approved reading assessment.

## Admission, Continuance, and Exit Requirements for Approved Teacher Education Programs

Admission to Old Dominion University does not guarantee admission to degree and/or teacher preparation programs in the Darden College of Education. All such programs have admission, continuance, and exit requirements based on the Regulations Governing the Review and Approval of Education Programs in Virginia and specific departmental criteria. These

criteria include minimum grade point averages, course grades, licensure assessments, professional dispositions, and faculty recommendations. Admission to an approved teacher education program is described in this section of the catalog.

## Admission

Students applying for admission to the teacher education program must have a minimum (may vary based on program) 2.75 grade point average overall, in the major, and in the professional education core. Additionally, students must earn at least a grade of C or C- in all courses taken in the major (depending on program) and in the professional education core, and achieve passing Praxis I or the prescribed Virginia Board of Education assessment for admission to an approved teacher education program substitute test score for Praxis I described in this section of the catalog. As part of the admission application, applicants are required to provide authorization for the release of any disciplinary action that is contained in their student records upon application. Although students may enroll in a limited number of education courses, admission into the teacher education program and passing Praxis I scores or approved equivalent test scores must be on file in the Teacher Education Services Office prior to students enrolling in any professional education practicum course. Applicants must also complete the professional disposition survey.

## Continuance

Students must maintain a 2.75 minimum (may vary based on program) grade point average overall, in the major, and in the professional education core. Additionally, students must continue to earn at least a grade of C or C- (depending on program) in all courses taken in the major and in the professional education core for continuance in the teacher education program; have achieved passing Praxis I or the prescribed Virginia Board of Education assessment for admission to an approved teacher education program substitute test score for Praxis I; and achieve passing scores in the prescribed Virginia Board of Education professional assessments for licensure described in this section of the catalog, prior to the start of the teacher candidate internship.

Score reports for all examinations must be on file in the Teacher Education Services Office in room 152 of the Education Building. These score reports are to be provided by the candidate and will not be returned. For the most current information on prescribed Virginia Board of Education professional assessments for each individual passing score, visit the Teacher Education Services website, <http://education.odu.edu/tes> and review the *Teacher Education Handbook*.

## Exit

Students must have:

1. a minimum (may vary based on program) 2.75 grade point average overall, in the major content, and in the professional education core;
2. achieved all grades in the content of C or C- (as determined by the related department);
3. earned a passing grade in student teaching;
4. completed the senior assessment.

The Virginia Department of Education requires all initially licensed teachers, school counselors, administrators, and other school personnel to receive training on the recognition of child abuse and neglect. This training is verified through specific courses in the approved professional education programs. Students who transfer courses into the approved programs in place of the courses that meet the child abuse and neglect requirements must provide documentation that they have met the recognition of child abuse and neglect standards. For more information contact the staff in the Teacher Education Services and Advising Office, Education Building Room 152, or go to [www.odu.edu/tes](http://www.odu.edu/tes).

The Virginia Department of Education requires all initially licensed teachers, school counselors, administrators, and other school personnel to receive training in the area of technology. This training is received through specific courses in the approved professional education programs.

Prior to placements in practica and/or internships, students may be required to complete the Virginia State Police Criminal History Check (State Police Form 230), the Child Protective Service Central Registry Release of Information (032-02-1515/1), and a fingerprint check by the school district. Students may be liable for all costs incurred.

Due to changing University requirements, national accreditation standards, and Commonwealth licensure regulations, the programs in the Darden College of Education are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students should obtain current program information from their advisors and the Darden College of Education website at [www.education.odu.edu](http://www.education.odu.edu).

For more information on requirements in specific programs, students should refer to the individual program listings in this section or contact the Office of Teacher Education Services or the appropriate department in the College of Arts and Letters (p. 90), the Darden College of Education, or the College of Sciences.

## Observation and Participation

SEPS 297, TLED 290, or TLED 301 is the introductory undergraduate course in most programs in the Darden College of Education (equivalent course in the Department of Human Movement Sciences is HPE 230). The purpose of the course is to give students early opportunities for direct experience in elementary, middle, and high school classrooms. These experiences are designed to help prospective teachers decide whether or not teaching is the right choice for them, as well as to motivate them in preparing to teach.

## Prescribed Virginia Board of Education Assessment for Admission to an Approved Teacher Education Program

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program. This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

1. Passing Praxis I composite score of 532 by December 31, 2013; **or**
2. Passing Praxis Core Academic Skills Tests beginning January 1, 2014: Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; **or**
3. Approved substitute test scores:
  - a. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  - b. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
  - c. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
  - d. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
  - e. Praxis I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
  - f. Praxis Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
  - g. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
  - h. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
  - i. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**

- j. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.

*Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

## Early Field Experiences

A candidate may participate in a course with a field experience through one of two tracks:

### Option A

A candidate may be eligible to participate in the early field experience course if s/he has been admitted into an approved teacher education program. This requires that candidates achieve a passing Praxis I score or the Prescribed Virginia Board of Education Assessment for Admission to an Approved Teacher Education Program. In addition, candidates must meet the GPA for their individual programs, professional education courses, and minimum grade requirements, along with any other course prerequisites.

### Option B

A provisionally licensed teacher may participate in a course if s/he is currently employed with a school division, has a letter from the Virginia Department of Education listing the course as a needed requirement, and has passing Virginia Communication and Literacy Assessment (VCLA) scores. The provisionally licensed teacher will have to meet all the requirements of the course as stated in the syllabus.

The college is committed to developing candidates skilled in teaching students of all cultural and socioeconomic backgrounds and with diverse learning needs in a fair and equitable manner. Thus, candidates must complete their early field experiences in a public or private school accredited by the Virginia Department of Education. Teacher candidates may request specific schools and districts. However, these requests are informal and ARE NOT guaranteed. Candidates may not contact school district personnel in order to request or obtain placement. Candidates may not complete their field experience at a school where an immediate relative is attending or working. Candidates are required to disclose this information on the on-line application.

## Prescribed Virginia Board of Education Professional Assessments for Licensure

Old Dominion University teacher candidates seeking initial licensure through the completion of an approved teacher education program must successfully pass the Prescribed Virginia Board of Education Professional Assessments for Licensure prior to the start of the teacher candidate internship. The following assessments must be completed with a passing score:

1. Virginia Communication and Literacy Assessment (VCLA) passing composite score of 470;
2. Praxis II specialty area exam passing score approved by the Virginia Board of Education; and
3. Virginia Reading Assessment (VRA) passing score of 235 for pre-k-3, pre-k-6, and k-12 special education general curriculum endorsements, and 245 for the reading specialist endorsement, or the current Virginia Board of Education approved reading assessment. On July 1, 2011, the Virginia Department of Education implemented changes to the required reading assessment. The required reading assessment for pre-k-3, pre-k-6, and k-12 special education general curriculum endorsement is the Reading for Virginia Educators (RVE). The required passing score is 157. The required passing score for Reading Specialist is 162.

For the most current information on the prescribed Virginia Board of Education professional assessments for each individual passing score, visit the Teacher Education Services website, <http://education.odu.edu/tes> and review the *Teacher Education Handbook*.

## Undergraduate Teacher Education Program Continuance Policy

Once individuals are admitted to the undergraduate teacher education program, they are expected to continue to maintain the same caliber of academic achievement during the remainder of their program. This will ensure that teacher candidates remain on track with projected graduation dates. In the event that a candidate experiences academic difficulty *immediately* prior to enrollment in a practicum course, the policies below will govern. Academic difficulty is defined as not meeting the minimum grade point average (GPA) program requirement or earning a grade or grades that do not meet the candidate's program requirements the first time the course was taken.

**GPA below minimum program requirement:** In order to register for a practicum course, a candidate must demonstrate that it is mathematically possible that the GPA deficiency can be resolved by the end of the semester in which practicum will be taken. This may require additional counseling with an academic advisor.

**Grade earned below minimum program requirement:** In order to register for a practicum course, a candidate **MUST** replace any deficient grade the NEXT semester that the course is available. Teacher candidates will be able to enroll simultaneously in both the replacement class and practicum if that is the next available semester for the course. Candidates will be able to take practicum PRIOR to replacement of the deficient grade **ONLY IF** the course that needs repeating is not available to the candidate until after the semester when practicum would be scheduled. This policy will also apply if the teacher candidate has multiple courses that require repeating.

In the event that the teacher candidate has a posted grade of Incomplete, the outstanding course work must be finished by the end of the semester in which practicum is taken. Re-enrollment in the course is **NOT** required when an "I" is assigned.

\*Under all circumstances, grade and GPA requirements **MUST** be met before enrollment in the teacher candidate internship (student teaching).

## Teacher Candidate Internship

Teacher internship is the culminating experience in the approved teacher education programs. This experience is a crucial part of a candidate's preparation to becoming a professional educator. During the teaching internship experience, candidates observe the operation of schools; analyze the implementation of curricula and instructional strategies; observe the growth and development of students; assist with classroom and extracurricular activities; and ultimately assume responsibility for the academic instruction and management of the classroom. Candidates' work is evaluated by clinical faculty (cooperating teachers in the schools) in conjunction with University supervisors.

To be eligible to participate in the teaching internship experience, the candidate must have been admitted into an approved teacher education program. In addition, candidates must have completed all elements of their approved program. Applications are due February 1 for Fall placements and August 1 for Spring placements. Late applications **WILL** result in candidates not being placed.

This requires the candidate to achieve passing Praxis Core or Praxis I or the prescribed Virginia Board of Education Assessment for Admission to an Approved Teacher Education Program substitute test score for Praxis Core or Praxis I described in this section of the catalog. In addition, candidates must meet the GPA requirements for their individual programs, professional education GPA requirements, and minimum major content grade requirements. Also, candidates must successfully pass the prescribed Virginia Board of Education Professional Assessments for licensure prior to the start of the teacher candidate internship described in this section of the catalog. All assessments for student teaching must be in the Teacher Education Services Office (152 Education Building) August 1 before Fall orientation and January 3 before Spring orientation for student teaching. All coursework must be completed with the required program grades, prior to

the beginning of the teacher candidate internship orientation. There are no exceptions.

The Darden College of Education is committed to developing candidates skilled in teaching students of all cultural and socioeconomic backgrounds with diverse learning needs in a fair and equitable manner. Thus, teacher candidates may complete their teaching internships in public or private schools that have been accredited by the Virginia Department of Education or other State Department of Education. Candidates may request specific school districts and schools. These requests are **informal and are not guaranteed**. Candidates may not contact school district personnel in order to request or obtain a placement. Candidates may not complete their internship at a school where a relative is working. Candidates are required to disclose this information on the student teaching application. If a candidate is placed at a school where a relative is located, the candidate will be removed from the placement and will have to complete the internship the following semester. Candidates may not student teach in the school where they attended/graduated from high school.

Additionally, a negative tuberculin screening is required prior to the teacher internship. Prospective candidates are required to provide authorization for the release of any disciplinary action that is contained in their student records. Prior to placement, students may be required to complete the Virginia State Police Criminal History Check (State Police Form 230), the Child Protective Service Central Registry Release of Information (032-02-1515/1), and a fingerprint check by the school district. Students may be liable to all costs incurred. Additionally, prospective teacher interns should avail themselves of liability or tort insurance, which can be obtained through membership in the Student Virginia Education Association of Old Dominion University.

## Advanced Placement

The Darden College of Education is comprised of a variety of undergraduate and graduate programs. The College provides a guarantee on all teacher candidates completing the state-approved programs with initial teacher licensure. Thus, experiential learning credit is not approved for education courses with field placements/practica or student teaching. For additional information on advanced placement and experiential learning, students may refer to the Policy on Experiential Learning at the Undergraduate Level found in this Catalog.

## Teacher Education Services

Leigh Butler, Assistant Dean  
152 Education Building  
757-683-6448

The staff in the Office of Teacher Education Services and Advising (TES) in the Darden College of Education supports teacher education programs in the College of Arts and Letters, the College of Sciences, and the Darden College of Education. In this role of support, the mission of the Office of TES is to provide, facilitate, promote, and uphold the standards of Old Dominion University to grant undergraduate and graduate degrees with a teacher education emphasis in PreK-3, PreK-6, 6-8, 6-12 and PreK-12, school counseling, educational leadership and speech language, which are accredited by the National Council for Accreditation of Teacher Education (NCATE) and approved by the Virginia Department of Education (VDOE).

The TES staff is committed to serving students pursuing a professional education emphasis through their respective college's academic departments and fostering a process with the following features:

1. academic advisement of prospective teacher candidates pursuing an undergraduate or graduate degree with either a professional education or human services emphasis, including development of appropriate academic plans
2. promotion of professional education programs, including informing candidates of scholarship and study abroad opportunities, as well as credentialing requirements
3. communication with prospective teacher candidates regarding admission, continuance, and exit requirements for their respective education degree and initial licensure programs

4. facilitation of the placement of field experiences for teacher candidates in appropriate K-12 classroom settings in order to meet observation, practicum, and student teaching internship requirements
5. coordination and presentation of supervisors and student teacher orientations.

## Programs for Continued Learning

The Programs for Continued Learning Department extends to the community special conferences, workshops, seminars, in-service training, and short courses. Drawing on the faculty of the college and experts in the field, programs are designed in areas such as leadership, counseling/interpersonal skills, learning and curriculum design, training and development, health education, and physical fitness. Clients consist of educators as well as professionals in business, industry, and public, private and governmental agencies. Programs are designed to help professionals increase and upgrade their development activities. Professional and personal development programs are awarded continuing education credit (CEUs).

## Communication Disorders and Special Education

Stacie Raymer, Chair

The Department of Communication Disorders and Special Education is dedicated to preparing professionals to serve in educational and clinical settings as well as community agencies. The department fulfills this mission through its undergraduate and graduate degrees as well as licensure programs. An undergraduate degree is offered in speech-language pathology and audiology. Graduate degree programs and licensure are offered in speech-language pathology and special education. Special education students may emphasize either a combination of learning disabilities, emotional and behavioral disorders, and mental retardation or early childhood special education and severe disabilities.

## Interdisciplinary Studies Undergraduate Preparation

Undergraduate students who are interested in special education can become eligible for licensure to teach special education through the College of Arts and Letters Interdisciplinary Studies Teacher Preparation program. See the Interdisciplinary Studies section of this Catalog or the web site for additional information, admission, continuance, exit and assessment requirements, program requirements and curriculum of study: <http://al.odu.edu/ids/tprep>.

## Minor in Special Education

Required courses are:

SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 400	Foundations of Special Education: Legal Aspects and Characteristics	3
SPED 402	Instructional Design I: Learner Characteristics and Assessment	3
SPED 411	Classroom and Behavioral Management Techniques for Students with Diverse Needs	3
SPED 415	Instructional Design II: Curricular Procedures and Individualized Education Planning	3
or SPED 417	Collaboration and Transitions	

SPED 415 requires passing the Prescribed Virginia State Board of Education Assessment for admission to an approved teacher education program (see Darden College of Education section for specific assessment information). TLED 430 is highly recommended as an additional course for those students planning to seek certification. For completion of a minor, a student must have a minimum grade point average of 2.00 in all courses required for the minor exclusive of prerequisite courses and complete a minimum of six

hours in upper-level courses in the minor requirement at Old Dominion University.

## Guaranteed Entry Program in Special Education

Undergraduate students will be automatically accepted into the graduate program in special education if they have met the following requirements.

- 3.50 grade point average and 1100 SAT or 3.25 grade point average and 1180 SAT at the high school level.
- A minimum 3.50 grade point average in undergraduate course work.
- Permission of the special education faculty.
- Passing scores on all parts of the Praxis I exam.

## Bachelor of Science—Speech-Language Pathology and Audiology Major

Stacie Raymer, Program Director

The undergraduate program in speech-language pathology and audiology is designed to provide students with the academic experiences needed to identify and assess speech, language and hearing disorders and to prescribe effective therapeutic procedures. The minimum number of hours required for the degree is 120. Consistent with national accreditation standards, bachelor's level students are not eligible for employment as a speech-language pathologist or audiologist in any professional setting. Therefore, the undergraduate program at Old Dominion University serves as a feeder program to the master's degree program, which prepares students for employment through advanced course work, on-campus practica, and off-campus practica.

### Admission, Continuance and Exit Requirements

#### Admission

Requirements are as follows:

- Students must have completed one year of course work with a grade point average of at least 2.50
- Students must have an interview with a program advisor.

#### Continuance

A cumulative grade point average of 2.50 in all major courses is required for continuing status. Grades below C- in major courses must be retaken to attain a grade of C- or higher. A grade of C or better is required in CSD 449W in order to meet the undergraduate writing requirement.

#### Exit

Undergraduate majors must have satisfied University and program requirements, complete ENGL 110C, ENGL 211C or ENGL 221C or ENGL 231C, and the writing intensive (W) course in the major with a grade of C or better, and have a grade point average of at least 2.50 in all major courses.

### Lower Division General Education

Written Communication Skills *	6
Oral Communication	3
Mathematical Skills	3
Language and Culture	0-6
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science **	8

Select one of the following:

BIOL 105N	Biology for Nonscience Majors I
BIOL 106N	Biology for Nonscience Majors II

BIOL 110N & BIOL 111N	Environmental Sciences and Environmental Sciences Lab	
BIOL 117N & BIOL 118N	Introduction to Human Biology and Introduction to Human Biology Lab	
BIOL 121N & BIOL 122N	General Biology I and General Biology I Lab	
Select one of the following:		
CHEM 105N & CHEM 106N	Introductory Chemistry and Introductory Chemistry Laboratory	
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	
PHYS 101N	Conceptual Physics	
PHYS 111N	Introductory General Physics	
PHYS 231N	University Physics	
Human Behavior ***		3-6
Impact of Technology		3
<b>Total Hours</b>		<b>41-50</b>

\* C or better required in both courses.

\*\* In accordance with national accreditation requirements, students must complete 8 credit hours of natural sciences, with 4 credit hours in biological sciences and 4 credit hours in either chemistry or physics.

\*\*\* In accordance with national accreditation requirements, students must complete 6 credit hours of human behavior coursework, preferably PSYC 201S and SOC 201S.

### Major Courses

Third Year - first semester

CSD 351	Anatomy of Speech, Language, and Swallowing (Fall only)	3
CSD 450	Survey of Communication Disorders	3
CSD 460	Hearing Disorders and Basic Audiometry	3
SPED 400	Foundations of Special Education: Legal Aspects and Characteristics	3
ENGL 350	Aspects of the English Language	3

Third Year - second semester

CSD 352	Phonetics (Spring only)	3
CSD 449W	Introduction to Clinical Procedures in Speech-Language Pathology	3
CSD 453	Language Development	3
CSD 461	Aural Rehabilitation I (Spring only)	3
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3

Third Year - third semester

CSD 447	Introduction to Language Disorders in Children (Summer only)	3
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Fourth Year - first semester

CSD 451	Articulation and Phonological Disorders	3
CSD 465	Signing I-Beginning Nonverbal Communication	3
SPED 411	Classroom and Behavioral Management Techniques for Students with Diverse Needs	3
CSD/SPED Elective		3

Fourth Year - second semester

CSD 458	Speech and Hearing Science (Spring only)	3
CSD 452	Voice Disorders (Spring only)	3
CSD 459	Augmentative and Alternative Communication Methods and Materials (Spring only)	3

**Total Hours** 54

Major courses in which a grade below C- was earned must be repeated. A grade of C or better must be earned in CSD 449W.

## Elective Credit

Elective credit may be needed to meet the requirement of 120 credit hours.

## Upper Division General Education

- Option A. Approved Disciplinary Minor (a minimum of 12 hours determined by the department), or second degree or second major.
- Option B: Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Education and not required by the major (6 hours)

Requirements for graduation include a minimum cumulative grade point average of 2.50 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Minor in Speech-Language Pathology and Audiology

CSD 450	Survey of Communication Disorders	3
CSD 460	Hearing Disorders and Basic Audiometry	3
Electives		
Select four of the following:		12
CSD 451	Articulation and Phonological Disorders	
CSD 452	Voice Disorders	
CSD 453	Language Development	
CSD 458	Speech and Hearing Science	
CSD 459	Augmentative and Alternative Communication Methods and Materials	
CSD 461	Aural Rehabilitation I	
Total Hours		18

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Counseling and Human Services

Danica Hays, Chair

The Department of Counseling and Human Services offers one undergraduate program, the Bachelor of Science with a major in human services. On the graduate level, the department offers the Master of Science in Education in counseling, an advanced Education Specialist degree in counseling, and a counseling emphasis in the Ph.D. in Education program. Once admitted to the human services program, students must consult their advisors regarding program requirements and selection of courses.

## Bachelor of Science—Human Services Major

Tammi Milliken, Coordinator

The program leading to the Bachelor of Science with a major in human services prepares students for entry-level positions in a wide variety of community service settings. Students in the program learn the roles and functions of the human service profession; characteristics of human growth and development; personal, social, and environmental factors affecting individual development; characteristics of human service agencies; theories

and skills of human services; and how ethical issues, legal issues, and multicultural issues affect the work of the human service profession. Graduates are prepared to assist clients in coping successfully with developmental tasks of normal growth and in solving problems caused by personal, social, and environmental stress. Graduates may be employed in a wide variety of settings including mental health, mental retardation, substance abuse, aging/gerontology, domestic violence, child and youth services, correction/criminal justice, health care, recreation/fitness, and vocational rehabilitation.

## Admission

Students must have a grade point average of 2.00 or above and have successfully completed ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C. A grade of C or better must be earned in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C to meet the undergraduate writing program requirement.

## Program Requirements

All human services majors must satisfy the Bachelor of Science in human services core requirements, major requirements, minor requirements, any applicable electives, and General Education requirements as listed below.

A one-semester, unpaid internship (HMSV 468) is required after all other General Education courses, core courses, major courses, and minor courses are completed. Students are not to take any other courses when enrolled in the internship. Requirements for the internship include a minimum cumulative GPA of 2.0 overall and in the major and minor. Students must earn a grade of C (2.00) or better in the following courses before taking the internship:

HMSV 339	Interpersonal Relations	3
HMSV 341	Introduction to Human Services	3
HMSV 343W	Human Services Methods	3
HMSV 368	Field Observation in Human Services	3
HMSV 440W	Program Development, Implementation, and Funding	3

Students' prior coursework will be evaluated by an advisor at the time of admission to the program. Following admission, students must obtain permission from an authorized faculty advisor before registering. Students should obtain a curriculum sheet from the Human Services website [http://education.odu.edu/chs/academics/human\\_services/](http://education.odu.edu/chs/academics/human_services/) or from their academic advisor to assist in making course selections. Students must adhere to all course prerequisites and corequisites as stated in the course descriptions and on the curriculum sheets.

## Lower-Division General Education

Written Communication Skills *	6
Mathematical Skills **	3
Oral Communication ***	
Information Literacy and Research	3
Language and Culture	0-6
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
Human Behavior ****	6
The Nature of Science	8
Impact of Technology	3
Total Hours	41-47

\* Grade of C or better required in both courses

\*\* STAT 130M preferred.

\*\*\* Satisfied by HMSV 339 in the major.

\*\*\*\* PSYC 201S or PSYC 203S and SOC 201S required with a grade of C or better.

## Human Services Major Requirements

HMSV 339	Interpersonal Relations *	3
HMSV 341	Introduction to Human Services *	3
HMSV 343W	Human Services Methods *	3
HMSV 344	Career Development and Appraisal	3
HMSV 346	Diversity Issues in Human Services	3
HMSV 368	Field Observation in Human Services *	3
HMSV 440W	Program Development, Implementation, and Funding *	3
HMSV 441	Non-Profit Fund-Raising in Human Services	3
HMSV 444	Psycho-educational Groups	3
Choose one of the following:		3
HMSV 447	Addictions: Theory and Intervention	
HMSV 448	Interventions and Advocacy with Children	
HMSV 449	Theory and Practice of Prevention in Human Services	
HMSV 491	Family Guidance	3
HMSV 468	Internship in Human Services *	12
Total Hours		45

\* Grade of C or better is required.

## Upper-Division General Education Requirements (6 hours minimum)

Select one option from the following:

- Option A. Approved Disciplinary Minor (a minimum of 12 hours determined by the department) or Second Major or Second Degree
- Option B. Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure.
- Option D. Two Upper-Division Courses from outside the College of Education and not required by the major (6 hours)

## Electives

Elective credit will be needed to meet the minimum of 120 hours required for the degree.

Requirements for graduation include completion of the Writing Sample Placement Test, a minimum cumulative grade point average of 2.00 overall and in the major and minor, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of all general education requirements including ENGL 110C and ENGL 211C or ENGL 221C with a grade of C or better, completion of all major requirements including the writing intensive (W) course in the major with a grade of C or better, and completion of the Senior Assessment.

## Minor in Human Services

Area I required:		12
HMSV 339	Interpersonal Relations	
HMSV 341	Introduction to Human Services	
HMSV 343W	Human Services Methods	
HMSV 346	Diversity Issues in Human Services	
Select one from the following Area II courses:		3
HMSV 344	Career Development and Appraisal	
HMSV 447	Addictions: Theory and Intervention	
HMSV 448	Interventions and Advocacy with Children	

HMSV 449	Theory and Practice of Prevention in Human Services	
HMSV 491	Family Guidance	
Total Hours		15

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Educational Foundations and Leadership

Jay Scribner, Chair

The Department of Educational Foundations and Leadership offers master's and education specialist degree programs in educational leadership and supervision and higher education. Educational leadership and higher education are offered at the doctoral level as emphasis areas in the Ph.D. in Education program. The department also offers a separate Ph.D. program in Community College Leadership. Please refer to the Graduate Catalog (<http://catalog.odu.edu/graduate>) for information on these programs.

## Human Movement Sciences

Lynn L. Ridinger, Chair

The Department of Human Movement Sciences offers programs leading to the Bachelor of Science with a major in physical education (concentration areas in exercise science, health and physical education PreK-12 teacher preparation, and sport management), the Bachelor of Science with a major in park, recreation and tourism studies (concentration areas in tourism management, park and recreation management, and therapeutic recreation), the Master of Science in Education with a major in physical education, and a Ph.D. in Education with a concentration in human movement sciences.

## Bachelor of Science—Physical Education Major

### Program Requirements

All majors must satisfy the requirements in the appropriate concentration area – exercise science, sport management, or teacher preparation – as described below in addition to minor requirements, any applicable electives, and General Education requirements.

## Sport Management Concentration

Aundrea Lyons, Program Coordinator

2020 Student Recreation Center

757 683-3354

This program is designed to prepare students for managerial positions within sport-oriented organizations. Careers in sport promotion, sport marketing, health and fitness center management, sport event management, sport facility/arena management and other sport-related businesses are targeted. The requirements for the concentration are as follows:

### Prerequisites:

1. MATH 102M, MATH 103M or MATH 162M with a grade of C- or better is a prerequisite for SMGT 214.
2. SMGT 214 is a prerequisite for all other SMGT courses.
3. ENGL 110C and ENGL 211C or the equivalent are prerequisites for SMGT 315 and SMGT 450W.
4. ACCT 201 is a prerequisite for SMGT 331.

### Continuance:



1. Maintain an overall grade point average of 2.0 or higher.
2. Maintain a grade point average of 2.0 or higher in the major.
3. Earn a grade of C or higher in SMGT 450W and a grade of C- or higher in all other SMGT core courses.
4. Grade of C- or higher in all additional required courses for the major (ACCT 201, ACCT 202, ECON 202S, MKTG 311 and MGMT 325).
5. Complete an internship seminar and all core course work prior to the internship.
6. A total of 9 credit hours of advisor approved electives is required to attain 120 credit hours for graduation.

**Exit:**

1. Have an overall grade point average of 2.0 or higher.
2. Have a grade point average of 2.0 or higher in the major.
3. Complete ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major (SMGT 450W) with a grade of C or better.
4. Complete an internship.
5. Satisfy all core competencies.
6. Complete 120 credit hours.
7. Take the University Senior Assessment Survey.

**Lower Division General Education**

Written Communication Skills *	6
Oral Communication	3
Mathematical Skills **	3
MATH 102M College Algebra or MATH 103M College Algebra with Supplemental Instruction or	
MATH 162M Precalculus I	
Language and Culture	0-6
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics ***	
The Nature of Science	8
Human Behavior	3
ECON 200S Basic Economics or ECON 201S Principles of Macroeconomics	3
Impact of Technology	3
<b>Total Hours</b>	<b>41-47</b>

- \* Grade of C or better required in both courses
- \*\* Grade of C- or better
- \*\*\* Satisfied with SMGT 450W in the major.

**Sport Management Core Requirements**

SMGT 214	Introduction to Sport Management	3
SMGT 305	Sport Administrative Theory	3
SMGT 315	Sport Media and Public Relations	3
SMGT 331	Fiscal Planning and Management in Sport and Recreation	3
SMGT 414	Sport Marketing	3
SMGT 421	Legal Aspects in Recreation and Sport Management	3
SMGT 450W	Ethics and Morality in Sport *	3
SMGT 452	Sport Facility Management	3
SMGT 453	Event Management and Sport Sponsorship	3

SMGT 455	Sport in Contemporary Society	3
SMGT 456	Sport Psychology	3
SMGT 366	Internship Seminar	1
SMGT 368	Internship	12
<b>Additional Required Courses</b>		
ACCT 201	Principles of Financial Accounting	3
ACCT 202	Principles of Managerial Accounting	3
ECON 202S	Principles of Microeconomics	3
MKTG 311	Marketing Principles and Problems	3
MGMT 325	Contemporary Organizations and Management	3
<b>Total Hours</b>		<b>61</b>

\* Grade of C or better required.

**Elective credit may be needed to meet the minimum of 120 credits required for the degree.**

**Upper Division General Education**

A minor in Management or Marketing is recommended, but students may select another minor with approval from their advisor. Students must follow the requirements for the selected minor option as outlined in this Catalog.

Requirements for graduation include a minimum cumulative grade point average of 2.0 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of the Senior Assessment.

**Exercise Science Concentration**

Laura Hill, Program Coordinator

2009 Student Recreation Center

757 683-4624

This program is designed to prepare students for careers in preventive and rehabilitative exercise and wellness programs in settings such as hospitals, wellness and rehabilitation centers, sports medicine clinics, government agencies, health and fitness centers, and corporate industry. Academic preparation focuses on the scientific aspects of exercise related to asymptomatic and symptomatic populations. The program also serves to prepare students for graduate studies in exercise science, physical therapy, and other allied health fields.

Continuance:

1. Students must achieve a grade of C or better in BIOL 250, MATH 102M, MATH 103M or MATH 162M before taking all EXSC courses except EXSC 225.
2. In order to be eligible to register for the Internship course (EXSC 368) a student must have completed all EXSC courses with a GPA of 2.0 in the major.

Exit:

1. Maintain an overall grade point average of 2.0 or better.
2. Maintain a grade point average of 2.0 or better in the major.
3. Complete ENGL 110C, ENGL 211C or ENGL 221C or ENGL 231C, and the writing intensive course in the major with a grade of C or better.
4. Complete the University Senior Assessment Survey.
5. Sit for an external certification examination, either the American College of Sports Medicine Health Fitness Specialist or the National Strength and Conditioning Association's Certified Strength and Conditioning Specialist.
6. Complete the Exercise Science Interview Form and Self-Study Student Questionnaire.

The requirements for the exercise science concentration are the following:

## Lower Division General Education

Written Communication Skills *	6
Oral Communication	3
Mathematical Skills **	3
MATH 102M College Algebra or MATH 103M College Algebra with Supplemental Instruction or MATH 162M Precalculus I	
Language and Culture	0-6
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
BIOL 121N General Biology I & BIOL 122N and General Biology I Lab BIOL 123N General Biology II & BIOL 124N and General Biology II Lab	
Human Behavior	3
PSYC 201S Introduction to Psychology	
Impact of Technology ***	
Total Hours	38-44

\* Grade of C or better required in both courses

\*\* Grade of C or better required

\*\*\* Satisfied with EXSC 417W in the major

## Exercise Science Requirements

BIOL 250 Human Anatomy and Physiology I *	4
BIOL 251 Human Anatomy and Physiology II	4
CHEM 121N Foundations of Chemistry I Lecture & CHEM 122N and Foundations of Chemistry I Laboratory	4
CHEM 123N Foundations of Chemistry II Lecture & CHEM 124N and Foundations of Chemistry II Laboratory	4
EXSC 225 Introduction to Exercise Science	3
EXSC 240 Prevention and Care of Injuries Related to Physical Activity	3
EXSC 250 Strength and Conditioning Leadership	3
EXSC 322 Anatomical Kinesiology	3
EXSC 408 Nutrition for Fitness and Sport	3
EXSC 415 Exercise Testing for Normal and Special Populations	4
EXSC 417W Biomechanics *	4
EXSC 428 Exercise Prescription for Chronic Disease	3
EXSC 431 Wellness Programming and Administration	3
PHYS 111N Introductory General Physics	4
EXSC 366 Exercise Science Seminar	1
Total Hours	50

\* Grade of C or better required

CHOOSE ONE OF THE FOLLOWING

Scientific Foundations of Exercise option:

Course List

PHYS 112N Introductory General Physics	4
EXSC 326 Exercise Physiology I	3
EXSC 327 Exercise Physiology II	3
EXSC 420 Research Methods in Exercise Science	3
Electives	10
Total Hours	23

Preventive/Rehabilitative Exercise option:

Course List

EXSC 326 Exercise Physiology I	3
EXSC 327 Exercise Physiology II	3
EXSC 368 Internship	12
Electives	5
Total Hours	23

All EXSC courses will be used to calculate the major grade point average, which must be 2.00 to graduate.

Elective credit may be needed to meet the minimum of 120 credits required for the degree.

## Upper Division General Education

- Option A. Disciplinary Minor (a minimum of 12 hours determined by the department or Second Major or Second Degree)
- Option B. Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Education and not required by the major (6 hours)

Additional free elective hours may be needed to make 120 credits total.

A minimum 2.00 grade point average is required in the major, minor and overall to meet graduation requirements. Other requirements include completion of a minimum of both 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of the Senior Survey.

## Health and Physical Education PK-12 Teaching Licensure Concentration

Steve Knott, Program Coordinator

This program is designed to promote competencies involved in the teaching of health and physical education in pre-kindergarten through grade 12.

### Admission

All students must apply for and be admitted into the approved Health and Physical Education teacher preparation program. Students must meet the required criteria for admission by passing the Virginia Board of Education Prescribed Entry Assessments and earn the minimum required grade point averages (GPA).

### Prescribed Virginia Board of Education Assessment for Admission to an Approved Teacher Education Program

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program.

This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

1. Passing PRAXIS I composite score of 532 by December 31, 2013; **or**
2. Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014:

Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; or

3. Approved substitute test scores:
  - a. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  - b. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
  - c. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
  - d. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
  - e. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
  - f. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
  - g. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
  - h. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
  - i. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**
  - j. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.

*Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

### Required grade point averages (GPA):

- A cumulative GPA of 2.75 is required.
- A major /content GPA of 2.75 is required - PE 301W must be passed with a grade of C or higher, and all other Health and Physical education courses must be passed with a grade of C- or higher.
- A professional education GPA of 2.75 is required – all professional education courses must be passed with a grade of C- or higher.

Although students may enroll in a limited number of education courses, students must be admitted into the approved Health and Physical Education teacher preparation program prior to enrolling in any instructional strategies practicum education course (HPE 369).

### Continuance

Students must maintain a cumulative GPA of 2.75, a major/content GPA of 2.75 and a professional education GPA of 2.75. PE 301W must be passed with a grade of C or higher, and all other health and physical education courses must be passed with a grade of C- or higher. The remaining courses required for the major and in the professional education core must be completed with a grade of C- or higher for continuance. A professional education GPA of 2.75 is required for continuance. Students must take and pass the Virginia Communication and Literacy Assessment (VCLA) and the PRAXIS II Health and Physical Education examination (0856) prior to or while enrolled in the student teaching seminar course. All assessments must be passed prior to start of the Teacher Candidate Internship Orientation session.

### Virginia Board of Education Prescribed Licensure Assessments:

**Virginia Communication and Literacy Assessment (VCLA)** – a passing composite score of 470 is required on this reading and writing assessment

**PRAXIS II Health and Physical Education: Content Knowledge (test code: 0856)** – passing score of 151 is required

To review more information on the Virginia Board of Education Prescribed Licensure Assessments visit the Teacher Education Services website, [www.odu.edu/tes](http://www.odu.edu/tes).

### Graduation

Requirements for graduation include completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better; completion of the Senior Assessment; a minimum cumulative 2.75 GPA in the major area and in the professional education core, with no grade less than a C- in the major/content and in the professional education core; successful completion of the Teacher Candidate Internship; and completion of a minimum of 123 credit hours, which must include both a minimum of 31 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University.

All PE, HE, HPE, and EXSC courses and BIOL 250 will be used to calculate the major content grade point average, which must be 2.75 for admission into the approved teacher education program, for continuance, and for graduation. Additional elective hours may be needed to make 120 total hours.

Due to changing University requirements, national accreditation standards, and the Virginia Board of Education licensure regulations, the programs in the Darden College of Education are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students are encouraged to obtain current program information from their advisors and from the Teacher Education Services website: [www.odu.edu/tes](http://www.odu.edu/tes).

### Lower Division General Education

Written Communication Skills *	6
Oral Communication Skills	3
COMM 101R	Public Speaking (required)
Mathematical Skills	3
Language and Culture	0-6
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science **	8
Human Behavior	3
PSYC 201S	Introduction to Psychology
Impact of Technology ***	
Total Hours	38-44

\* Grade of C or better required in both courses

\*\* BIOL 117N/BIOL 118N and BIOL 121N/BIOL 122N recommended

\*\*\* Satisfied by TLED 430 in the major.

### Health and Physical Education Requirements

BIOL 250	Human Anatomy and Physiology I	4
TLED 408	Reading and Writing in Content Areas	3
TLED 430	PK-12 Instructional Technology	3
PE 200	Foundations of Education, Physical Education and Health	3
PE 217	Fundamental Movement Skills and Dance	2
PE 218	Aquatics and Outdoor Education	2
PE 220	Teaching of Team Sports I	2
PE 221	Teaching of Team Sports II	2
PE 222	Teaching of Individual Sports	2
PE 224	Teaching Elementary Physical Education	3

PE 300	Management Skills for Teaching Health and Physical Education	3
PE 301W	Teaching Physical Education in the Secondary Schools *	3
PE 318	Motor Learning	3
PE 319	Physical Growth and Motor Development	3
PE 404	Adapted Physical Education	4
PE 409	Physiology of Exercise	3
EXSC 250	Strength and Conditioning Leadership	3
EXSC 322	Anatomical Kinesiology	3
HE 230	Personal and Community Health	3
HE 324	Teaching Injury Care for Sports	3
HE 402	Methods and Materials in Health Education	3
HPE 230	Field Experience in Physical Education and Health	2
HPE 369	Practicum in Physical Education and Health	3
HPE 406	Tests and Measurement in Physical Education and Health	3
HPE 430	Teaching Wellness and Health-Related Fitness	3
HPE 485	Teacher Candidate Internship	12
HPE 487	Teacher Candidate Seminar	1
Total Hours		84

\* Grade of C or better required

## Upper Division General Education

Satisfied by the required minor in health education included in the program (Option A) and completion of professional education courses (Option C).

All PE, HE, HPE, and EXSC courses and BIOL 250 will be used to calculate the major grade point average which must be 2.75 to graduate. Additional elective hours may be needed to make 123 total hours, which must include both a minimum of 31 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University.

## Driver Education Endorsement Area\*

PE 308	Driver Education Foundations of Traffic Safety	3
PE 309	Principles and Methodologies of Classroom and In-Car Instruction	3
Total Hours		6

PE 308 and PE 309 are required by the Virginia Department of Education for an endorsement in Driver Education. The courses provide prospective teachers with the essential knowledge, skills, and dispositions to effectively deliver the course content as presented in the Administrative and Curriculum Guide for Driver Education in Virginia.

\* Driver Education endorsement is strongly recommended for all teacher candidates desiring to teach at the secondary level.

## Bachelor of Science–Park, Recreation and Tourism Studies Major

Edwin Gómez, Program Coordinator

2021 Student Recreation Center

757 683-6309

This program is designed to prepare students to enter the professional fields of park, recreation, and tourism management and therapeutic recreation. The park, recreation and tourism studies curriculum is accredited by the Council on Accreditation for Parks, Recreation, Tourism and Related Professions.

A minimum of 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major

program from Old Dominion University, is required for the recreation and tourism studies major.

## Admission

Students must:

Have completed 15 semester hours of course work (including ENGL 110C) with a grade point average of 2.00

Have a personal interview with a faculty member in the program.

Complete a background check for courses where students will have contact with children and youths.

## Continuance

Students must:

1. Maintain an overall grade point average of 2.00
2. Maintain a grade point average of 2.00 in the major
3. Earn a grade of C or higher in PRTS 482W and a grade of C- or higher in the remaining PRTS core courses
4. Complete ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better
5. Complete an internship seminar and all core course work prior to the internship

## Exit

Students must:

1. Have an overall grade point average of 2.00
2. Have a grade point average of 2.00 in the major
3. Complete ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better
4. Complete an internship
5. Satisfy all course competencies
6. Take the University assessment exam

## Lower Division General Education

Written Communication Skills *	6	
Oral Communication	3	
Mathematical Skills	3	
Language and Culture	0-6	
Information Literacy and Research	3	
Select one of the following:		
IT 150G	Basic Information Literacy and Research	
CS 120G	Introduction to Information Literacy and Research	
CS 121G	Introduction to Information Literacy and Research for Scientists	
STEM 251G	Computer Literacy: Communication and Information	
Human Creativity	3	
Interpreting the Past	3	
Literature	3	
Philosophy and Ethics	3	
The Nature of Science	8	
Human Behavior	3	
Impact of Technology	3	
Total Hours		41-47

\* Grade of C or better required in both courses.

## Park, Recreation and Tourism Studies Core Requirements

PRTS 201	Recreation Programming and Leadership	3
PRTS 211	Foundations of Parks, Recreation and Tourism	3
PRTS 285	Diversity in Parks, Recreation and Tourism Studies	3
PRTS 301	Youth Development through Recreation	4
PRTS 302	Facilitating the Recreation Experience	4
PRTS 332	Personnel Management in Recreation	3
PRTS 366	Internship Seminar	1
PRTS 368	Internship	12
PRTS 425	Financial and Risk Management in Recreation	3
PRTS 482W	Applied Research and Evaluation in Recreation *	4
Total Hours		40

\* Grade of C or better required.

### Select one of the following three concentration areas:

#### Park and Recreation Management

PRTS 251	Introduction to Park and Recreation Management	3
PRTS 405	Outdoor Recreation	3
PRTS 406	Outdoor Leadership and Environmental Education	3
PRTS 433	Community Recreation	3
PRTS 475	Tourism and Cultural Heritage Management	3
PAS 300	Foundations of Public Service	3
POLS 300	Introduction to Public Policy	3
MGMT 325	Contemporary Organizations and Management	3
MKTG 311	Marketing Principles and Problems	3
Total Hours		27

#### Tourism Management

MGMT 325	Contemporary Organizations and Management	3
MKTG 311	Marketing Principles and Problems	3
PRTS 271	Introduction to Tourism Management	3
PRTS 433	Community Recreation	3
PRTS 441	Marketing of Hospitality Services	3
PRTS 461	The Tourism and Hospitality Industry	3
PRTS 475	Tourism and Cultural Heritage Management	3
PRTS 490	Convention and Meeting Services	3
PRTS 491	Festival and Event Management	3
Total Hours		27

#### Therapeutic Recreation

PSYC 203S	Lifespan Development	3
BIOL 250	Human Anatomy and Physiology I	4
PSYC 405	Abnormal Psychology	3
PRTS 261	Introduction to Therapeutic Recreation	3
PRTS 410	Clinical Aspects of Therapeutic Recreation	3
PRTS 420	Intervention Techniques in Therapeutic Recreation	3
PRTS 430	Assessment and Documentation in Therapeutic Recreation	3
PRTS 450	Disabilities and Aging in Therapeutic Recreation	3

PRTS 460	Managing Therapeutic Recreation Services	3
Total Hours		28

## Electives

Elective credit may be needed to meet the minimum of 120 credit hours required for the degree.

## Upper Division General Education

- Option A: Disciplinary Minor (a minimum of 12 hours determined by the department) or Second Major or Second Degree
- Option B: Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C: International Business and Regional Courses or an approved Certification Program such as teaching licensure.
- Option D: Six hours of elective upper-division courses from outside the College of Education and not required by the student's major.

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall, in the major and in the minor, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment. Additional elective hours may be needed in order to complete the minimum 120 credits required for the degree.

## Minors

### Coaching Education

BIOL 250 and HE 324 are prerequisites for the minor and are not included in the calculation of the grade point average for the minor. Requirements for the minor are:

PE 409	Physiology of Exercise	3
SMGT/PE 415	Principles of Coaching Management	3
SMGT/PE 456	Sport Psychology	3
SMGT 368	Internship	12
Total Hours		21

### Exercise Science

BIOL 250 and EXSC 225 are prerequisites for the minor and are not included in the calculation of the grade point average for the minor. Requirements for the minor are EXSC 322, 409, 415 and three hours from one of the following:

PE 409	Physiology of Exercise	3
EXSC 322	Anatomical Kinesiology	3
EXSC 415	Exercise Testing for Normal and Special Populations	4

Select one of the following: 3

EXSC 240	Prevention and Care of Injuries Related to Physical Activity	3
EXSC 369	Practicum in Exercise Science	3
EXSC 408	Nutrition for Fitness and Sport	3
EXSC 420	Research Methods in Exercise Science	3
EXSC 428	Exercise Prescription for Chronic Disease	3
EXSC 431	Wellness Programming and Administration	3

Total Hours 13

### Health Education—Nonteaching Track

BIOL 250 and HE 230 are prerequisites for the minor and are not included in the calculation of the grade point average for the minor. Requirements for the minor are:

HE 324	Teaching Injury Care for Sports	3
HE 402	Methods and Materials in Health Education	3

HPE 430	Teaching Wellness and Health-Related Fitness	3
PE 319	Physical Growth and Motor Development	3
Total Hours		12

### Park, Recreation and Tourism Management

PRTS 251 or PRTS 271 is a prerequisite for the minor and is not included in the calculation of the grade point average for the minor. Requirements for the minor are completion of 12 hours from the following:

Select four from the following:		12
PRTS 405	Outdoor Recreation	
PRTS 406	Outdoor Leadership and Environmental Education	
PRTS 433	Community Recreation	
PRTS 441	Marketing of Hospitality Services	
PRTS 461	The Tourism and Hospitality Industry	
PRTS 475	Tourism and Cultural Heritage Management	
PRTS 490	Convention and Meeting Services	
PRTS 491	Festival and Event Management	
Total Hours		12

### Sport Management

SMGT 214 is a prerequisite for the minor and is not included in the calculation of the grade point average for the minor. Requirements for the minor are completion of 12 hours from the following:

Select four from the following:		12
SMGT 305	Sport Administrative Theory	
SMGT 315	Sport Media and Public Relations	
SMGT 331	Fiscal Planning and Management in Sport and Recreation	
SMGT 369	Practicum in Physical Education, Recreation, and Athletics	
SMGT 414	Sport Marketing	
SMGT 415	Principles of Coaching Management	
SMGT 421	Legal Aspects in Recreation and Sport Management	
SMGT 450W	Ethics and Morality in Sport	
SMGT 452	Sport Facility Management	
SMGT 453	Event Management and Sport Sponsorship	
SMGT 455	Sport in Contemporary Society	
SMGT 456	Sport Psychology	
Total Hours		12

### Therapeutic Recreation

PRTS 261 is a prerequisite for the minor and is not included in the calculation of the grade point average for the minor. Requirements for the minor are completion of 12 hours as follows:

Select four from the following:		12
PRTS 410	Clinical Aspects of Therapeutic Recreation	
PRTS 420	Intervention Techniques in Therapeutic Recreation	
PRTS 430	Assessment and Documentation in Therapeutic Recreation	
PRTS 450	Disabilities and Aging in Therapeutic Recreation	
PRTS 460	Managing Therapeutic Recreation Services	
Total Hours		12

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of 100- and 200-level courses and prerequisite courses

(2.75 for teacher licensure with no less than C- earned in all core courses) and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University. To obtain a Virginia teaching license, all teacher education and licensure only students must attain a passing score on the appropriate Praxis II specialty area test.

## Interdisciplinary Minor - Health and Wellness

Laura Hill, Department of Human Movement Sciences, Coordinator

The Health and Wellness interdisciplinary minor explores personal involvement in and commitment to health and wellness and the factors that influence the health status of individuals and society. This interdisciplinary minor fosters an appreciation for personal responsibility for health and strategies to enhance and preserve the individual's and the public's health. Societal health and the factors that impact on the health and wellness of a community and the individual's role in health policy are examined. Students gain an awareness of the cultural, psychological, sociological and ethical issues affecting and effected by the health and wellness of individuals and the society in which they live.

Course options are as follows:

CHP 360	Introduction to Global Health	3
CHP 420	Foundations of Gerontology	3
CHP 425	Health Aspects of Aging	3
CHP 456	Substance Use and Abuse	3
CHP 465	Policy and Politics of Health	3
CHP 470	Death, Dying and Survivorship	3
CRJS 401	Understanding Violence	3
CRJS/SOC 421	Deviant Behavior	3
CRJS/SOC 427	Violence Against Women	3
CRJS/SOC 441	Drugs and Society	3
EXSC 240	Prevention and Care of Injuries Related to Physical Activity	3
EXSC 408	Nutrition for Fitness and Sport	3
EXSC 415	Exercise Testing for Normal and Special Populations	4
HE 402	Methods and Materials in Health Education	3
HPE 430	Teaching Wellness and Health-Related Fitness	3
HMSV 341	Introduction to Human Services	3
HMSV 491	Family Guidance	3
PE 300	Management Skills for Teaching Health and Physical Education	3
PE 319	Physical Growth and Motor Development	3
PE 409	Physiology of Exercise	3
PSYC 306	Health Psychology	3
PSYC 325	Drugs and Behavior	3
PSYC 351	Child Psychology	3
PSYC 352	Cognitive Development During Childhood	3
PSYC 353	The Psychology of Adulthood and Aging	3
PSYC 363	Psychology of Sex	3
PSYC 405	Abnormal Psychology	3
PSYC 408	Theories of Personality	3
PSYC 410	Human Cognition	3
PSYC 420	Cross-Cultural Psychology	3
PSYC 424	Physiological Psychology	3
PSYC 431	Community Psychology	3
PSYC 460	Psychology of African Americans	3
PSYC 461	Drug Abuse and Dependence	3
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3

The interdisciplinary minor in Health and Wellness requires 12 credit hours of 300/400-level courses selected from at least two different disciplines with a maximum of six credits from any one discipline. For completion of the interdisciplinary minor, students must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses. At least six hours of upper-level courses must be taken through courses offered by Old Dominion University. Three credit hours may be in the major, if a major course is listed as an option for the interdisciplinary minor. As such, it will be credited toward both the major and the interdisciplinary minor.

## Advanced Placement

Departmental examinations for advanced placement are available for selected courses in the undergraduate programs. Please contact the department chair for further details. Refer also to the Policy on Experiential Learning Credit Options at the Undergraduate Level in this Catalog.

# Science, Technology, Engineering, and Mathematics (STEM) Education and Professional Studies

Robert J. Spina, Interim Chair

The Department of STEM Education and Professional Studies offers five concentrations under the Bachelor of Science degree in occupational and technical studies. The five bachelor's-level concentrations offered by the department are marketing education, technology education, training specialist, fashion merchandising, and industrial technology. At the graduate level, the department offers the Master of Science degree with concentrations in community college teaching (occupational and technical), business and industry training, and career and technical education teaching; the Master of Science in Education degree with majors in instructional design and technology, mathematics education and science education; a concentration within the Education Specialist in educational leadership; and the Ph.D. in Education with concentrations in instructional design and technology and occupational and technical studies. The department also offers minors in fashion merchandising, training and development, and marketing education, a certificate in industrial training, and licensure/endorsement programs in marketing teacher education, technology education, and industrial cooperative training. Several licensure/endorsement areas are available for graduate students. The department provides a simulation-based instruction concentration in the Master of Science in Engineering modeling and simulation degree program.

## Bachelor of Science - Occupational and Technical Studies

### Admission

Students applying for admission to the marketing education and technology education teacher licensure programs must satisfy the Virginia Board of Education Required Assessment for admission to an approved teacher education program. This requirement can be satisfied by meeting a passing score in one of the selected criteria below.

1. Passing PRAXIS I composite score of 532 by December 31, 2013; **or**
2. Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014:  
Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; **or**
  - a. Approved substitute test scores:
  - b. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  - c. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
  - d. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**

- e. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
- f. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
- g. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
- h. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
- i. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
- j. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**
- k. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.  
*Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

1. Present written recommendations from two faculty members from the STEM Education and Professional Studies Department.
2. Have an interview with the program leader. Although students may enroll in a limited number of education courses, students must be admitted into the approved marketing education or technology education teacher preparation program prior to enrolling in any instructional strategies practicum education course SEPS 408.

For admission to the fashion merchandising, training specialist, or industrial technology bachelor's degree programs, students must:

1. Complete one semester at Old Dominion University.
2. Achieve a minimum grade point average of 2.00 on undergraduate course work completed at the time of application to the major.
3. Have an interview with the program leader.

### Continuance

Students in marketing education and technology education licensure programs must:

1. Satisfy University requirements.
2. Maintain a cumulative GPA of 2.75, a major/content GPA of 2.75 and a professional education GPA of 2.75 with no earned grade less than C- in all courses taken in the major and in the professional education core.
3. Successfully complete SEPS 297 and a student teaching interview.
4. Take and pass the Virginia Communication and Literacy Assessment (VCLA) and the appropriate PRAXIS II (Technology Education – Content Knowledge, 0051 or Marketing Education – Content Knowledge, 0561) prior to or while enrolled in the Instructional Strategies course SEPS 408. All assessments must be passed prior to the start of the Teacher Candidate Internship Orientation session.

Students in fashion merchandising, training specialist, or industrial technology majors must:

1. Satisfy University requirements.
2. Maintain a 2.00 overall grade point average.
3. Maintain a 2.00 grade point average in major courses.

### Assessments required for teacher education programs and licensure

In order to obtain a Virginia teaching license, all teacher education students must attain passing scores on the appropriate teacher licensure exams. Students are required to take and pass the Virginia Communication and Literacy Assessment (VCLA) with a composite score of 470 or higher to be eligible for licensure. The VCLA should be taken during the semester prior

to student teaching. It is recommended that the VCLA be taken after students have completed their English and reading course requirements. All students will take and attain a passing score on the appropriate Praxis II specialty test (Technology Education – Content Knowledge, 0051 with a score of 162 or Marketing Education – Content Knowledge, 0561 with a score of 147) in order to be eligible for student teaching and licensure. Score reports of all examinations must be on file in the Teacher Education Services Office in room 152 of the Education Building. To review more information on the Virginia Board of Education Prescribed Assessments, visit the Teacher Education Services website, <http://education.odu.edu/tes/>.

## Exit

Students in marketing education and technology education licensure programs must have:

1. A 2.75 grade point average overall, in the major, and in the professional education core.
2. Earned a passing grade in student teaching.
3. Completed ENGL 110C, ENGL 211C or 231C, and the writing intensive (W) course in the major with a grade of C or better.
4. Completed the senior assessment.

Students majoring in the fashion merchandising, training specialist, or industrial technology undergraduate programs must:

1. Meet all University requirements for graduation.
2. Have an overall grade point average of 2.00.
3. Complete ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better
4. Have a grade point average of 2.00 in major and minor courses.

Due to changing University requirements, national accreditation standards, and Commonwealth licensure regulations, the programs in the Darden College of Education are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students should obtain current program information from their advisors and the Darden College of Education website at <http://www.education.odu.edu/>.

## Marketing Education Concentration

This program is designed to prepare students to teach marketing and related subjects in the secondary schools. It is an approved program for meeting licensure requirements to teach marketing education in Virginia. The requirements are as follows:

### Lower Division General Education

Written Communication Skills *	6
Oral Communication	3
Mathematical Skills	3
Language and Culture	0-6
Information Literacy and Research	3
STEM 251G	Computer Literacy: Communication and Information
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Human Behavior	3
ECON 200S	Basic Economics
Impact of Technology is satisfied by STEM 370T in the major	
<b>Technical Content Courses</b>	<b>39</b>
SEPS 100	Sales Techniques
SEPS 102	Advertising and Promotion
ACCT 201	Principles of Financial Accounting
SEPS 208	Retail Merchandising and Buying

SEPS 220	The Fashion Industry
SEPS 302	Workforce Supervision
MKTG 311	Marketing Principles and Problems
MGMT 325	Contemporary Organizations and Management
STEM 370T	Technology and Society (Writing Intensive) **
MKTG 402	Consumer Behavior
SEPS 415	Advanced Merchandising
STEM 351	Communication Technology
SEPS 480	Senior Project: Merchandise Retailing
<b>Marketing Education Teaching Courses</b>	<b>38</b>
TLED 408	Reading and Writing in Content Areas
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence
SEPS 297	Observation and Participation
SEPS 400	Instructional Systems Development
SEPS 401	Foundations of Career and Technical Education
SEPS 408	Advanced Classroom Issues and Practices in Career and Technical Education
SEPS 485	Student Teaching
SEPS 402	Instructional Methods in Occupational Studies
SEPS 405	Directed Work Experience
SEPS 450	Assessment, Evaluation and Improvement

Total Hours 115-121

**Elective credit may be needed to meet the minimum of 120 credits required for the degree.**

\* Grade of C or better required in both courses

\*\* Grade of C or better required

## Upper Division General Education

Satisfied through the professional education sequence.

## Technology Education Concentration

This program is designed to prepare students to teach technology education subjects in the secondary and middle schools. It is an approved program for meeting licensure requirements to teach technology education in Virginia. Requirements are as follows.

### Lower Division General Education

Written Communication Skills *	6
Oral Communication	3
Mathematical Skills	6
MATH 102M	College Algebra
or MATH 103M	College Algebra with Supplemental Instruction
STAT 130M	Elementary Statistics
Language and Culture	0-6
Information Literacy and Research is met through STEM 251G in the major.	
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
PHYS 111N	Introductory General Physics
BIOL 121N	General Biology I
& BIOL 122N	and General Biology I Lab
Human Behavior	3



PSYC 201S	Introduction to Psychology	
Impact of Technology is met through STEM 370T in the major.		
<b>Technical Content</b>		45
CHEM 103	Introductory Chemistry	
STEM 110T	Technology and Your World	
MET 120	Computer Aided Drafting	
STEM 251G	Computer Literacy: Communication and Information	
STEM 350	Communication Technology Processes	
STEM 221	Industrial Materials	
STEM 231	Materials and Processes Technology	
STEM 320	Manufacturing and Construction Technology	
STEM 241	Energy Systems: Basic Electricity	
STEM 242	Technological Systems Control	
STEM 330	Medical, Agricultural, and Biological Technologies	
STEM 360	Energy, Power, and Transportation Technologies	
STEM 370T	Technology and Society (Writing Intensive) **	
STEM 382	Industrial Design	
<b>Technology Education Teaching Courses</b>		31
SEPS 401	Foundations of Career and Technical Education	
TLED 408	Reading and Writing in Content Areas	
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	
SEPS 297	Observation and Participation	
SEPS 400	Instructional Systems Development	
SEPS 402	Instructional Methods in Occupational Studies	
SEPS 408	Advanced Classroom Issues and Practices in Career and Technical Education	
SEPS 485	Student Teaching	
SEPS 450	Assessment, Evaluation and Improvement	
Total Hours		117-123

Elective credit may be needed to meet the minimum of 120 credits required for the degree.

\* Grade of C or better required in both courses

\*\* Grade of C or better required

## Upper Division General Education

Satisfied through the professional education sequence.

## Fashion Merchandising Concentration

This program is designed to prepare students to enter the fashion industry to become buyers, fashion coordinators, and merchandise managers. Requirements are as follows:

### Lower Division General Education

Written Communication *		6
Oral Communication		3
Mathematical Skills		3
Language and Culture		0-6
Information Literacy and Research		3
STEM 251G	Computer Literacy: Communication and Information	
Human Creativity		3
Interpreting the Past		3
Literature		3

Philosophy and Ethics		3
The Nature of Science		8
Human Behavior (ECON 200S required)		3
Impact of Technology is satisfied by STEM 370T in the major.		
<b>Technical Content Courses</b>		58
SEPS 100	Sales Techniques	
SEPS 102	Advertising and Promotion	
ACCT 201	Principles of Financial Accounting	
STEM 350	Communication Technology Processes	
SEPS 208	Retail Merchandising and Buying	
SEPS 220	The Fashion Industry	
SEPS 234	Survey of Dress and Costume	
SEPS 302	Workforce Supervision	
SEPS 303	Social Aspects of Clothing	
STEM 370T	Technology and Society (Writing Intensive) **	
MKTG 311	Marketing Principles and Problems	
MGMT 325	Contemporary Organizations and Management	
SEPS 400	Instructional Systems Development	
SEPS 402	Instructional Methods in Occupational Studies	
SEPS 405	Directed Work Experience	
SEPS 415	Advanced Merchandising	
SEPS 422	Fashion Product Development	
SEPS 480	Senior Project: Merchandise Retailing	
SEPS 481	Occupational Career Transition	
Select four of the following or other advisor approved electives:		12
SEPS 409	Fashion Market Trip	
SEPS 410	The Foreign Fashion Market Trip	
SEPS 423	Visual Merchandising and Display	
SEPS 424	Fashion, Textiles, and Construction Analysis	
SEPS 431	Web-Based Organization for Fashion	
<b>Elective Credit (consult the department advisor)</b>		6
Total Hours		114-120

Elective credit may be needed to meet the minimum of 120 credits required for the degree.

\* Grade of C or better required in both courses

\*\* Grade of C or better required

## Upper Division General Education

- Option A. Approved Disciplinary Minor (a minimum of 12 hour determined by the department) or second degree or second major
- Option B. Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Education and not required by the major (6 hours)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Industrial Technology Concentration

This program is designed to prepare students to enter industry as supervisors, technical managers, or trainers. This concentration is also available through

the University's distance learning system. Additional industrial technology technical concentration tracks are available for transfer students. On approval of the program leader, select technical content areas from the community college can satisfy the 30 hours of technical content for this emphasis. Requirements are as follows:

### Lower Division General Education

Written Communication *	6
Oral Communication	3
Mathematical Skills	6
MATH 102M      College Algebra	
or MATH 103M    College Algebra with Supplemental Instruction	
STAT 130M      Elementary Statistics	
Language and Culture	0-6
Information Literacy and Research	3
STEM 251G      Computer Literacy: Communication and Information	
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
PHYS 101N      Conceptual Physics	
& PHYS 102N    and Conceptual Physics	
Human Behavior	3
PSYC 201S      Introduction to Psychology	
Impact of Technology is satisfied by STEM 370T in the major.	
<b>Technical Content-General Emphasis</b>	<b>24</b>
MET 120          Computer Aided Drafting	
STEM 221          Industrial Materials	
STEM 231          Materials and Processes Technology	
STEM 241          Energy Systems: Basic Electricity	
STEM 242          Technological Systems Control	
STEM 321          Manufacturing Technology	
STEM 351          Communication Technology	
STEM 382          Industrial Design	
<b>Supervision</b>	<b>18</b>
SEPS 302          Workforce Supervision	
STEM 370T      Technology and Society (Writing Intensive)	
**	
SEPS 402          Instructional Methods in Occupational Studies	
SEPS 400          Instructional Systems Development	
PSYC 303          Industrial/Organizational Psychology	
HMSV 339          Interpersonal Relations	
<b>Business Cognate</b>	<b>21</b>
ACCT 201          Principles of Financial Accounting	
MGMT 325          Contemporary Organizations and Management	
MGMT 340          Human Resources Management	
MKTG 311          Marketing Principles and Problems	
<b>Approved Business Electives (Three Courses)</b>	<b>9</b>
Total Hours	113-119

Elective credit may be needed to meet the minimum of 120 credits required for the degree.

\* Grade of C or better required in both courses

\*\* Grade of C or better required

### Upper Division General Education

- Option A. Approved Disciplinary Minor (a minimum of 12 hours determined by the department) or second degree or second major
- Option B. Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Education and not required by the major (6 hours)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

### Training Specialist Concentration

This program is designed to prepare students as training specialists who design, develop, and present training in business and industry. This concentration is also available through the University's distance learning system. On approval of the program leader, select business-related technical content areas from the community college can satisfy 30 hours of technical content for this emphasis. Requirements are as follows:

#### Lower Division General Education

Written Communication Skills *	6
Oral Communication	3
Mathematical Skills	3
Language and Culture	0-6
Information Literacy and Research	3
STEM 251G      Computer Literacy: Communication and Information	
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Human Behavior	3
ECON 200S      Basic Economics	
Impact of Technology is satisfied by STEM 370T in the major.	
<b>Technical Content Courses</b>	<b>45</b>
ACCT 201          Principles of Financial Accounting	
HMSV 339          Interpersonal Relations	
MGMT 325          Contemporary Organizations and Management	
MGMT 340          Human Resources Management	
MKTG 311          Marketing Principles and Problems	
SEPS 302          Workforce Supervision	
STEM 370T      Technology and Society (Writing Intensive)	
**	
SEPS 389          Education and Training of Adults	
SEPS 402          Instructional Methods in Occupational Studies	
SEPS 405          Directed Work Experience	
STEM 351          Communication Technology	
SEPS 450          Assessment, Evaluation and Improvement	
SEPS 400          Instructional Systems Development	
PSYC 201S      Introduction to Psychology	
PSYC 303          Industrial/Organizational Psychology	
<b>Training Electives ***</b>	<b>28</b>

**Elective credit may be needed to meet the minimum of 120 credits required for the degree.**

- \* Grade of C or better required in both courses
- \*\* Grade of C or better required
- \*\*\* Consult the departmental advisor for a list of approved courses used to meet this requirement.

### Upper Division General Education

- Option A. Approved Disciplinary Minor (a minimum of 12 hours determined by the department) or second degree or second major
- Option B. Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Education and not required by the major (6 hours)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Teacher Education, Secondary Undergraduate Programs - Mathematics and Science

### The following program is for freshmen and sophomores.

The MonarchTeach program is an innovative teacher preparation program that introduces mathematics and science majors to the teaching profession through early field experiences. MonarchTeach, a collaboration between the Darden College of Education and the College of Sciences, allows students to pursue secondary teacher licensure while at the same time completing their four-year mathematics or science degree program. Following completion, students are awarded a Virginia teaching license along with a B.S. degree in their content area.

MonarchTeach allows students to “Try Out Teaching” through Step 1 and Step 2, both one-credit, hands-on courses. Through these courses, students gain early teaching experience as they prepare and teach lessons in local elementary and middle school classrooms. These courses meet weekly on the ODU campus and experienced master teachers assist students in preparing inquiry-based lessons. Additional courses required in the MonarchTeach program, drawn from both the Darden College of Education and the College of Sciences, emphasize the relationships between mathematics and science, while integrating teaching content and skills throughout the field-intensive curriculum. Coursework in the MonarchTeach program prepares teacher candidates interested in teaching secondary mathematics or science to complete content and pedagogical competency requirements for teacher licensure in the Commonwealth of Virginia.

All students seeking Virginia Department of Education licensure to teach in secondary schools must complete all admission, continuance, and exit requirements for approved Teacher Education Programs (see the Darden College of Education Teacher Education Program section of this catalog). To graduate and be recommended for licensure, students must complete the required coursework in an approved College of Sciences degree program and in the MonarchTeach program. Students must have a minimum major and overall GPA of at least 2.75, have earned a grade of at least C- in all of the professional development and supporting courses listed below with the exception of Apprentice Teaching, which is a pass/fail course, have passing scores on PRAXIS I or equivalent SAT or ACT scores as established by the

Virginia Board of Education, as well as passing scores on the appropriate PRAXIS II content examination and the Virginia Communication and Literacy Assessment, and have passed the final teaching portfolio review.

All students in an initial licensure or advanced program for preparation of school personnel, upon enrolling/registering for their first Education class, are required to purchase the Standard LiveText Student Membership, a Web-based portfolio assessment system, approved by Old Dominion’s Teacher Education Council. In addition, students taking a course at ODU in which the instructor requires LiveText are required to purchase a membership.

STEM 101	Step 1 – Inquiry Approaches to Teaching STEM	1
STEM 102	Step 2 - Inquiry Based STEM Lesson Design	1
STEM 201	Knowing and Learning in STEM Education	3
STEM 202	Classroom Interactions in STEM Education	3
STEM 401	Project Based Instruction in STEM Education	3
STEM 402	Perspectives on STEM	3
SCI 468	Research Methods in Math and Sciences	3
STEM 485	Apprentice Teaching	9
Total Hours		26

Mathematics education students in the MonarchTeach program must also complete MATH 375 Advanced Concepts for Secondary Educators: Function and Modeling.

### The following program is for juniors and seniors. Program Requirements

Students who wish to teach any of the disciplines listed below in secondary schools must pursue courses of study leading to baccalaureate degrees in either the College of Arts and Letters or the College of Sciences. (See either the College of Arts and Letters or the College of Sciences section of this Catalog for full and specific requirements in any prospective teaching subject in secondary education.) In addition, to be eligible for state licensure to teach in secondary schools, students must complete requirements (listed below by subject area) in the Darden College of Education.

### Admission

Students must:

1. Have an overall grade point average of 2.75 and a 2.75 in the academic major and the professional education core;
2. Achieve passing scores (as established by the Commonwealth of Virginia) on the PRAXIS I Academic Skills Assessment or PRAXIS Core or the SAT or ACT as follows:
  - a. Passing PRAXIS I composite score of 532 by December 31, 2013; **or**
  - b. Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014: Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; or
  - c. Approved substitute test scores:
    1. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
    2. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
    3. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
    4. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**

5. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
  6. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
  7. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
  8. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
  9. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**
  10. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.
- Note: ACT scores taken prior to 1989 are not valid.*

3. Submit to the director of Teacher Education Services an application form containing recommendations from two faculty members familiar with their work. (These forms may be obtained either in the Office of Teacher Education Services or in the appropriate chair's office in either the College of Arts and Letters or the College of Sciences.)

No courses in the academic major or professional education core in which the student has made below a C- (depending on the program) will be accepted for admission in the Darden College of Education. Students should be formally admitted to teacher education before taking:

TLED 451	Developing Instructional Strategies for Teaching in the Middle/High School: English	3
TLED 455	Developing Instructional Strategies for Teaching in the Middle/High School: Social Studies	3
TLED 483	Seminar in Teacher Education	1
STEM 453	Developing Instructional Strategies for Teaching in the Middle/High School: Mathematics	3
STEM 454	Developing Instructional Strategies for Teaching in the Middle/High School: Science	3

## Continuance

Students must:

1. Maintain minimum overall grade point averages of 2.75 and 2.75 in the academic major and the professional education core;
2. Successfully complete TLED 301 and a subsequent practicum;
3. Be approved for teacher internship by the faculty;
4. Pass the VCLA; and
5. Pass PRAXIS II in order to participate in the teacher internship. Passing scores must be attached to the teacher internship application.

## Exit

Students must:

1. Have minimum overall grade point averages of 2.75 and 2.75 in the academic major and the professional education core;
2. Successfully complete prescribed student teaching experiences;
3. Have an exit interview; and
4. Have completed all course requirements. No courses in the academic major in which the student has made below a C- (depending on the program) will be accepted toward meeting requirements in the College of Education.

## Mathematics Education

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 430	PK-12 Instructional Technology	3

TLED 483	Seminar in Teacher Education	1
TLED 485	Teacher Candidate Internship	12
STEM 453	Developing Instructional Strategies for Teaching in the Middle/High School: Mathematics	3
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
<b>Total Hours</b>		<b>33</b>

## Science Education (Biology, Chemistry, Earth Science, Physics)

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 430	PK-12 Instructional Technology	3
TLED 483	Seminar in Teacher Education	1
TLED 485	Teacher Candidate Internship	12
STEM 454	Developing Instructional Strategies for Teaching in the Middle/High School: Science	3
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
<b>Total Hours</b>		<b>33</b>

## Minor in Fashion Merchandising

The department offers a minor in fashion merchandising for students majoring in disciplines other than occupational and technical studies emphasis areas. Requirements for the minor are completion of 12 credit hours from among the following courses:

Select four of the following:	12
SEPS 302	Workforce Supervision
SEPS 303	Social Aspects of Clothing
SEPS 367	Cooperative Education
SEPS 405	Directed Work Experience
SEPS 409	Fashion Market Trip
SEPS 410	The Foreign Fashion Market Trip
SEPS 415	Advanced Merchandising
SEPS 422	Fashion Product Development
SEPS 423	Visual Merchandising and Display
SEPS 424	Fashion, Textiles, and Construction Analysis
SEPS 431	Web-Based Organization for Fashion
SEPS 435	Global Retailing
or SEPS 440	Global Sourcing
SEPS 495	Topics in Occupational Education *
SEPS 496	Topics in Career and Technical Education *
<b>Total Hours</b>	<b>12</b>

\* Prior approval required

SEPS 208 or SEPS 220 are prerequisites for the minor and are not included in the calculation of the grade point average for the minor. Students must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of 100- and 200-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor through courses offered by Old Dominion University.

## Minor in Marketing Education

The minor in marketing education is offered by the department to students majoring in disciplines other than occupational and technical studies emphasis areas. Requirements for the minor are:

SEPS 401	Foundations of Career and Technical Education	3
SEPS 402	Instructional Methods in Occupational Studies	3
SEPS 408	Advanced Classroom Issues and Practices in Career and Technical Education	3
SEPS 450	Assessment, Evaluation and Improvement	3
STEM 351	Communication Technology	3
Total Hours		15

Students must pass the Praxis I examination prior to enrolling in SEPS 408. Students must have a minimum overall cumulative grade point average of 2.75 in all courses required for the minor exclusive of 100- and 200-level courses and prerequisite courses and six hours of the 300/400-level courses must be taken through courses offered by Old Dominion University. All courses may be applied toward the licensure requirements to teach marketing education in Virginia.

## Minor in Training and Development

The minor in training and development is offered by the department for students majoring in disciplines other than occupational and technical studies emphasis areas. The minor requires 15 hours of course work as follows:

SEPS 389	Education and Training of Adults	3
SEPS 400	Instructional Systems Development	3
SEPS 402	Instructional Methods in Occupational Studies	3
SEPS 450	Assessment, Evaluation and Improvement	3
STEM 351	Communication Technology	3
Total Hours		15

Students must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of 100- and 200-level courses and prerequisite courses and six hours of the 300/400-level courses must be taken through courses offered by Old Dominion University.

## Interdisciplinary Minor - The Impact of Technology

Philip A. Reed, Department of STEM Education and Professional Studies, Coordinator

This interdisciplinary minor develops a broader understanding of technology and its impact on individuals, societies, and the environment. It provides the social context and the historical and philosophical backgrounds needed by informed students to evaluate technology and its impacts. The minor equips students with skills to make better personal decisions about technology and more appropriate choices for their futures.

Course options are as follows:

CHP 360	Introduction to Global Health	3
COMM 340	Media and Popular Culture	3
COMM 372T	Introduction to New Media Technologies	3
COMM 400W	Intercultural Communication	3
COMM 401	Communication Theory	3
COMM 448	Transnational Media Systems	3
CS 300T	Computers in Society	3
CS 312	Internet Concepts	3
ECON 402	Transportation Economics	3
ECON 454W	Economic Development	3
ENGL 380	Reporting and News Writing I	3

ENGL 382	Reporting News for Television and Digital Media	3
ENGL 480	Investigative Reporting Techniques	3
ENVH 301W	Environmental Health	3
ENVH 402W	Environmental Health Administration and Law	3
GEOG 305	World Resources	3
GEOG 306T	Hazards: Natural and Technological	3
HIST 304T	History of Medicine, Disease, and Health Technology	3
HIST 389T	Technology and Civilization	3
HIST 386T/SCI 302T	The Evolution of Modern Science	3
IT 360T	Principles of Information Technology	3
MUSC 335T	Music Production: MIDI I	3
OPMT 303	Operations Management	3
PHIL 355	Computer Ethics	3
PHIL 383T	Technology: Its Nature and Significance	3
POLS 350T	Technology and War	3
SOC 352	War and Peace	3
STEM 370T	Technology and Society	3
STEM 382	Industrial Design	3
STEM 417	Exploring Technology and Modern Industry	3
WMST 390T	Women and Technology Worldwide	3

The interdisciplinary minor in the Impact of Technology requires 12 credit hours of 300/400-level courses selected from at least two different disciplines with a maximum of six credits from any one discipline. For completion of the interdisciplinary minor, students must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses. At least six hours of upper-level courses must be taken through courses offered by Old Dominion University. Three credit hours may be in the major, if a major course is listed as an option for the interdisciplinary minor. As such, it will be credited toward both the major and the interdisciplinary minor.

## Certificate Program in Industrial Training

This program is designed especially for military and civilian instructors and trainers. It is directed to those individuals who possess technical skills in the military, industry, career and technical centers, or community colleges. This certificate requires successful completion of the following 21 credit hours (seven courses):

SEPS 302	Workforce Supervision	3
SEPS 400	Instructional Systems Development	3
SEPS 402	Instructional Methods in Occupational Studies	3
STEM 351	Communication Technology	3
STEM 370T	Technology and Society	3
PSYC 303	Industrial/Organizational Psychology	3
HMSV 343W	Human Services Methods	3
Total Hours		21

## Licensure/Endorsement Programs

### Licensure Program in Marketing Teacher Education

The licensure program in marketing teacher education is designed to prepare a person who has a business-related baccalaureate degree to be a marketing education teacher-coordinator. Participants who successfully complete this program will qualify to apply for a Virginia teaching license to teach marketing education.

#### Admission

Prior to entering this program students must hold a business-oriented baccalaureate degree in which 30 hours of marketing-related courses

have been completed including at least three semester hours each of courses covering the marketing process, economics, personnel, the sales process, operations and organization, and promotion. Students must also have completed a rigorous general education program as outlined by the Commonwealth in its Licensure Regulations for Teachers. They must be interviewed and accepted by the marketing education program leader. Finally, students must attain or exceed the minimum score required by Virginia on the PRAXIS I examination. The PRAXIS I exam must be passed prior to admittance into teacher education and taking SEPS 408/SEPS 508.

**Exit**

Students must:

- Complete the following courses:
 

SEPS 297	Observation and Participation	1
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
TLED 408	Reading and Writing in Content Areas	3
SEPS 400/500	Instructional Systems Development	3
SEPS 401/501	Foundations of Career and Technical Education	3
SEPS 408/508	Advanced Classroom Issues and Practices in Career and Technical Education	3
SEPS 450/550	Assessment, Evaluation and Improvement	3
SEPS 485	Student Teaching	12
<b>Total Hours</b>		<b>31</b>
- Earn a 2.75 cumulative grade point average if licensure is at the undergraduate level and a 3.00 cumulative grade point average if licensure is at the graduate level; and
- Document at least 4000 clock hours of marketing-related work experience completed within the past five years or complete SEPS 405.

Passing scores on PRAXIS II are required before teacher internship. Passing PRAXIS II scores must be attached to the teacher internship application.

Twelve hours of 500/600 level courses may be applied toward the Master of Science in occupational and technical studies, career and technical education teaching concentration.

**Endorsement Program in Industrial Cooperative Training**

The endorsement program in industrial cooperative training is designed to prepare a licensed teacher to be endorsed to teach industrial cooperative training in the public schools.

**Admission**

Prior to entering this program students must have or qualify for a Virginia Collegiate Professional or Postgraduate Professional License. Secondly, they must be interviewed and accepted by the program coordinator.

**Exit**

Students must:

- Complete the following courses:
 

SEPS 400/500	Instructional Systems Development	3
SEPS 401/501	Foundations of Career and Technical Education	3
SEPS 402/502	Instructional Methods in Occupational Studies	3
SEPS 408/508	Advanced Classroom Issues and Practices in Career and Technical Education	3
SEPS 450/550	Assessment, Evaluation and Improvement	3
<b>Total Hours</b>		<b>15</b>
- Earn a 2.75 cumulative grade point average if licensure is at the undergraduate level and a 3.00 cumulative grade point average if licensure is at the graduate level; and

- Document at least 4000 clock hours of acceptable employment in a trade, technical, or industrial education subject area completed within the past five years or complete SEPS 405.

Twelve hours of 500/600 level courses may be applied toward the Master of Science in occupational and technical studies, career and technical education teaching concentration.

**Teaching & Learning**

Gail Dickinson, Interim Chair

The Department of Teaching and Learning offers programs leading to the Master of Science in Education degree with majors in Early Childhood, Elementary, Reading, and Secondary Education, and the Doctor of Philosophy in Education degree with concentrations in Early Childhood, Literacy Leadership, and Curriculum and Instruction. Programs leading to the Master of Science in Education degree include the five-year undergraduate/graduate program leading to the Bachelor of Science in Interdisciplinary Studies through the College of Arts and Letters with continuation into the Master of Science in Education degree with initial teacher licensure in Early Childhood or Elementary Education. State-approved teacher preparation programs at the graduate level are also available for individuals with non-teaching bachelor's degrees interested in licensure at the Elementary, Middle, or Secondary school grade levels. Additionally, the Department of Teaching & Learning offers programs leading to state licensure in Library Science, and programs for licensed teachers in Reading including the Reading Specialist endorsement, and the Field-Based Master's Program.

**Teacher Education—Primary/Elementary Undergraduate/Graduate—Early Childhood, PreK-3 or Elementary Education, PreK-6, Initial Licensure**

**Program Requirements**

Undergraduate students who plan to teach in primary (grades PreK-3) or elementary schools (grades PreK-6) are required to pursue the Bachelor of Science degree interdisciplinary studies major, teacher preparation concentration, primary/elementary emphasis through the College of Arts and Letters, as well as a fifth year graduate program leading to a Master of Science in Education degree with initial licensure in the Darden College of Education. Please see the College of Arts and Letters (p. 90) section of this Catalog for baccalaureate degree requirements in interdisciplinary studies, teacher preparation concentration, primary/elementary emphasis.

Due to changing University requirements, national accreditation standards, and Commonwealth of Virginia licensure regulations, the programs in the Darden College of Education are under constant revision. Any changes resulting from these factors supersede the program requirements described in this catalog. Students should obtain current program information from their advisors and the Darden College of Education website at [www.education.odu.edu](http://www.education.odu.edu).

Professional Education Requirements of the Undergraduate Interdisciplinary Studies Program Leading to Primary/Elementary Initial Licensure. (Academic undergraduate requirements are listed under Interdisciplinary Studies in the College of Arts and Letters.) Undergraduate courses required include:

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 430	PK-12 Instructional Technology	3
TLED 432	Developing Instructional Strategies PreK-6: Language Arts	3
TLED 435	Developing Instructional Strategies PreK-6: Social Studies	3
TLED 468	Language Acquisition and Reading for Students with Diverse Learning Needs	3

TLED 478	Integrating Instruction Across the Curriculum PreK-6	3
TLED 479	Classroom Management and Practice PreK-3; PreK-6	3
STEM 433	Developing Instructional Strategies PreK-6: Mathematics	3
STEM 434	Developing Instructional Strategies PreK-6: Science	3
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
Total Hours		33

Please refer to the Graduate Catalog (<http://catalog.odu.edu/graduate>) for master's degree requirements for the graduate portion of the initial licensure programs in PreK-3 and PreK-6.

## Teacher Education, K-12 and Secondary Undergraduate Programs

### Program Requirements

Students who wish to teach any of the disciplines listed below in secondary schools must pursue courses of study leading to baccalaureate degrees in either the College of Arts and Letters or the College of Sciences. (See either the College of Arts and Letters (p. 90) or the College of Sciences (p. 255) section of this Catalog for full and specific requirements in any prospective teaching subject in secondary education.) In addition, to be eligible for state licensure to teach in secondary schools, students must complete requirements (listed below by subject area) in the Darden College of Education.

### Admission, Continuance, and Exit Requirements

#### Admission

Students must:

1. Have an overall grade point average of 2.75 and a 2.75 in the academic major and the professional education core.
2. Achieve passing scores (as established by the Commonwealth of Virginia) on the PRAXIS I Academic Skills Assessment or PRAXIS Core or the SAT or ACT as follows:
  - a. Passing PRAXIS I composite score of 532 by December 31, 2013; **or**
  - b. Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014: Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; **or**
  - c. Approved substitute test scores:
3. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
4. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
5. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
6. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
7. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
8. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**

7. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
  8. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
  9. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**
  10. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.
- Note: ACT scores taken prior to 1989 are not valid.*

3. Submit to the director of Teacher Education Services an application form containing recommendations from two faculty members familiar with their work. (These forms may be obtained either in the Office of Teacher Education Services or in the appropriate chair's office in either the College of Arts and Letters or the College of Sciences.)

No courses in the academic major or professional education in which the student has made below a C (depending on the program) will be accepted for admission in the Darden College of Education. Students should be formally admitted to teacher education before taking:

TLED 451	Developing Instructional Strategies for Teaching in the Middle/High School: English	3
TLED 455	Developing Instructional Strategies for Teaching in the Middle/High School: Social Studies	3
STEM 453	Developing Instructional Strategies for Teaching in the Middle/High School: Mathematics	3
STEM 454	Developing Instructional Strategies for Teaching in the Middle/High School: Science	3

#### Continuance

Students must:

1. Maintain minimum overall grade point averages of 2.75 and 2.75 in the academic major and the professional education core.
2. Successfully complete TLED 301 and a subsequent practicum.
3. Be approved for teacher internship by the faculty.
4. Pass the VCLA.
5. Pass PRAXIS II in order to participate in the teacher internship. Passing scores must be attached to the teacher internship application.
6. A criminal background check must be completed prior to placement in a field experience required for practicum courses and for the teacher candidate internship. For more information please review the policy in the Teacher Education Services website: <http://www.odu.edu/tes>

#### Exit

Students must:

1. Have minimum overall grade point averages of 2.75 and 2.75 in the academic major and the professional education core.
2. Successfully complete prescribed student teaching experiences.
3. Have an exit interview.
4. Have completed all course requirements. No courses in the academic major in which the student has made below a C (depending on the program) will be accepted toward meeting requirements in the College of Education.

## Professional Education Course Requirements—Secondary

### Art Education

(This program leads to Licensure, K-12)

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 408	Reading and Writing in Content Areas	3
TLED 485	Teacher Candidate Internship	12

SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
ARTS 305	Elementary Art Education Methods and Classroom Management	3
ARTS 406	Secondary Art Education Methods and Classroom Management	3
ARTS 407	Art Education Practicum	2
ARTS 408	Student Teaching Seminar	1
Total Hours		33

### Dance Education

(This program leads to Licensure, K-12)

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 430	PK-12 Instructional Technology	3
TLED 485	Teacher Candidate Internship	12
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
PE 217	Fundamental Movement Skills and Dance	2
EXSC 240	Prevention and Care of Injuries Related to Physical Activity	3
Total Hours		34

### English Education

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 430	PK-12 Instructional Technology	3
TLED 451	Developing Instructional Strategies for Teaching in the Middle/High School: English	3
TLED 483	Seminar in Teacher Education	1
TLED 485	Teacher Candidate Internship	12
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
Total Hours		33

### Foreign Language Education

This program leads to Licensure to teach French, German, and/or Spanish. Students wanting to be certified to teach a foreign language must have a grade point average of at least 2.75 in the language and are strongly encouraged to participate in a structured learning experience in a country where the language is spoken. No course in the language with lower than a C (2.00) grade will be counted toward the degree or toward the number of credits required for student teaching. In addition, students must receive passing scores on language proficiency exams before they are approved for a student teaching assignment.

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 430	PK-12 Instructional Technology	3
TLED 485	Teacher Candidate Internship	12

SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
FL 452	Methods for Teaching Foreign Languages in Pre-K through Grade 12	3
FL 456	Seminar in Foreign Language Teacher Education	1
Total Hours		33

### History/Social Sciences Education

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 430	PK-12 Instructional Technology	3
TLED 455	Developing Instructional Strategies for Teaching in the Middle/High School: Social Studies	3
TLED 483	Seminar in Teacher Education	1
TLED 485	Teacher Candidate Internship	12
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
Total Hours		33

### Music Education

(This program leads to Licensure K-12)

TLED 301	Foundations and Introduction to Assessment of Education	3
TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 485	Teacher Candidate Internship	12
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
Select one of the following concentrations:		6

#### Vocal

MUSC 401	Music Education: Elementary Vocal and General Methods	
MUSC 402	Music Education: Practicum (Elementary Vocal and General)	
MUSC 403	Music Education: Secondary Vocal Methods	
MUSC 404	Music Education: Practicum (Secondary Vocal)	

#### Instrumental

MUSC 401	Music Education: Elementary Vocal and General Methods	
MUSC 402	Music Education: Practicum (Elementary Vocal and General)	
MUSC 407	Music Education: Secondary Instrumental Methods	
MUSC 408	Music Education: Practicum (Secondary Instrumental)	

Total Hours		32
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### Theatre Education

(This program leads to Licensure K-12)

TLED 301	Foundations and Introduction to Assessment of Education	3
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TLED 360	Classroom Management and Discipline	2
TLED 408	Reading and Writing in Content Areas	3
TLED 430	PK-12 Instructional Technology	3
TLED 485	Teacher Candidate Internship	12
SPED 313	Fundamentals of Human Growth and Development: Birth through Adolescence	3
SPED 406	Students with Diverse Learning Needs in the General Education Classroom	3
Total Hours		29

### **Add-on Endorsements**

Add-on endorsements are available in algebra I, computer science, English as a second language, journalism, and most other grade 6-12 areas. For information, please contact the Office of Teacher Education Services.

# Frank Batten College of Engineering & Technology

Oktay Baysal, Dean

Linda Vahala, Associate Dean

Shirshak Dhali, Associate Dean

## Mission Statement

In accordance with the mission of Old Dominion University, the Frank Batten College of Engineering and Technology promotes the advancement of engineering knowledge, both by its creation and dissemination, and by providing successful graduates and a continuously improving learning environment to its constituents, while maintaining ethical, multicultural and global standards.

## Overview

The Frank Batten College of Engineering and Technology at Old Dominion University offers degrees in engineering and in engineering technology. The course of study that leads to engineering degrees is characterized by a solid foundation in the theoretical underpinnings of engineering based in science and mathematics. Graduates are well equipped to pursue graduate education, pursue professional registration, or enter the engineering profession. The course of study that leads to engineering technology degrees is characterized by strong laboratory experiences that will prepare the graduate to hit the ground running as a technical partner of the engineer who can implement advanced design analysis and development concepts. The engineering technology degree is considered to be a terminal degree and graduates are prepared for manufacturing, testing, production and operations.

The Batten College of Engineering and Technology established the first academic department in Modeling, Simulation and Visualization Engineering in 2010. This department offers well established graduate degrees and the first Bachelor of Science degree in Modeling and Simulation Engineering.

The engineering and engineering technology programs at Old Dominion University are specifically designed to take advantage of the unique assets in the Hampton Roads area. These assets include:

1. a strong technology center to promote and use modeling and simulation
2. the NASA Langley Research Center with its focus on aerospace and virtual environments
3. the Jefferson Laboratories, a major center of nuclear physics
4. one of the major international deepwater ports on the east coast of the United States;
5. a major ship building and ship repair industry,
6. a major high technology industry base
7. very large military presence and installations

These assets have enabled the development of distinctive engineering and technology curricula. Points of distinction (from other programs in and out of the state) include the following:

## Career Advantage Program

Engineering and technology graduates get a head start on the engineering job market by preparing academically and experientially for their engineering and technology careers.

## Career Management Center

Students receive direct assistance in locating full- and part-time employment including co-op and internship opportunities through the college's Career Management office.

## Engineering Up-Front

Freshmen immediately become engaged in practical engineering and technology activities through a required course, Explore Engineering/Technology. Team projects in different engineering disciplines allow students to experience the professional spectrum from idea generation through its translation into the design, manufacture and commercialization cycle. Students are encouraged to complete this course before declaring a specific engineering discipline as a major.

## Multi-Disciplinary Industry Senior Project

Seniors may choose to join a multi-disciplinary team of students led by faculty and industry representatives to work on an industry project subject to specific deliverables and time and budget constraints.

## Accelerated Bachelor's/Master's Degree Programs

Students in the Batten College of Engineering and Technology may be accepted into both a bachelor's and master's program at the freshman year through the junior year and receive both degrees in five years. The degrees need not be in the same field of engineering.

## Professional Engineer (P.E.) Certification

The College encourages all of its graduates to eventually be certified as Professional Engineers (P.E.). The certification requires taking the Fundamentals of Engineering (FE) Examination and the Professional Engineering (PE) Examination. All students are encouraged to take the FE Examination in their senior year. For details, contact the Dean's Office and the following web site: [www.dpor.virginia.gov](http://www.dpor.virginia.gov) (<http://www.dpor.virginia.gov>)

For further information, please visit the college's web site: [www.odu.edu/eng](http://www.odu.edu/eng)

## Programs of Study

### Bachelor's

Engineering Programs:

- Civil
- Computer
- Electrical
- Mechanical
- Modeling & Simulation

Engineering Technology:

- Civil (CET)
- Electrical (EET)
- Mechanical (MET)
- General (GET)

### Master's

Engineering Programs:

- Aerospace
- Civil
- Electrical & Computer
- Engineering Management
- Environmental
- Mechanical
- Modeling & Simulation
- Systems Engineering

### Doctoral

Engineering Programs:

- Aerospace
- Biomedical
- Civil & Environmental

- Electrical and Computer
- Engineering Management
- Engineering Management & Systems Engineering
- Mechanical
- Modeling & Simulation

## Enterprise Centers

The Batten College of Engineering and Technology is a catalyst for the economic development of Hampton Roads. To this end, the college has established a number of centers to serve as engines for enterprise development. These centers utilize all University resources, including students and faculty. The former engineering centers now elevated as University Centers are the Virginia Modeling, Analysis and Simulation Center (VMASC) and Bioelectrics. The Mid-Atlantic Regional Spaceport (MARS) has been transferred to the Commonwealth.

### Applied Research Center (ARC)

Hani Elsayed-Ali, Director

ARC is an advanced materials engineering and laser technology research center. Staffed with industry/university teams utilizing the Jefferson Lab technologies, ARC provides commercial product-related research in the areas of thin film technology, laser and plasma processing of materials, materials analysis, and devices and sensor fabrication. For more information: [www.eng.odu.edu/arc](http://www.eng.odu.edu/arc).

### National Center for System of Systems Engineering (NCSE)

Charles Keating, Director

NCSE is a collection of independent, nonprofit, engineering research and application organizations, government entities, and universities that have joined together with a common goal to solve problems, develop technologies, and direct research focused on critical issues related to the integration of complex systems of systems.

## Affiliated Centers

### Frank Reidy Research Center for Bioelectrics

Richard Heller, Director

The mission of the Center is to increase scientific knowledge and understanding of the interaction of electromagnetic fields and ionized gases with biological cells and to apply this knowledge to the development of medical diagnostics, therapeutics, and environmental contamination. The objectives of the Center are to perform leading edge interdisciplinary and multi-institutional research, recruit top faculty and exceptional graduate students, support regional, national, and international programs, and increase external funding and institutional visibility. For more information: [www.odu.edu/enr/bioelectrics/](http://www.odu.edu/enr/bioelectrics/).

### Virginia Modeling, Analysis, and Simulation Center (VMASC)

John Sokolowski, Director

VMASC is a multi-disciplinary research center of Old Dominion University. Working with more than 100 industry, government, and academic members, VMASC furthers the development and applications of modeling simulation, and visualization as enterprise decision-making tools to promote economic, business, and academic development. For more information: [www.vmasc.odu.edu](http://www.vmasc.odu.edu).

## Departmental Institutes

**Coastal Engineering** is part of the college's Department of Civil and Environmental Engineering. Its mission is to foster interdisciplinary educational and research opportunities for faculty and students interested in applied coastal science and engineering. Director: David R. Basco.

### Institute for Multidisciplinary Parallel and Vector Computations

promotes interactions (and/or collaborations) among researchers in the areas of engineering applications, large scale computations, and parallel software and algorithm developments. Director: Duc T. Nguyen.

**Plasma Engineering and Medicine Institute** conducts fundamental and applied investigations using laser and plasma technologies. It offers state-of-the-art equipment and a vibrant academic environment where faculty, graduate students and undergraduate students collaborate in advanced fundamental and applied research in the field of cold plasmas, and its applications in engineering and medicine. Director: Mounir Laroussi.

**Transportation Research Institute** collaborates with centers and departments across the ODU campus to conduct innovation-based research in the core areas of transportation operations, transportation safety, transportation planning, freight transportation, and environment, energy, and sustainable transport. Director: Mecit Cetin.

**Marine Engineering Institute**, in collaboration with the shipbuilding and repair industry, promotes the research, development, education, and application of innovative techniques in the life cycle costs of marine assets including military, commercial, and pleasure craft. Director: To be named.

**Sustainable Development Institute** promotes and provides engineering, ecological, environmental, and economic assistance to local, regional, and national governmental agencies, as well as international organizations and businesses. The institute actively participates in community service by conducting waste minimization and pollution prevention assistance to local businesses. Director: Mujde Erten-Unal.

**Virginia Institute for Photovoltaics** conducts research that spans from the nanoscale to the deployment of Gigascale commercial power generation. A current focus is to research and develop the science and engineering of photovoltaic devices, or Solar cells, and take them from the laboratory to the industry. Director: Sylvain Marsillac.

**Virginia Institute for Vision Analysis** leverages the expertise of faculty in computer vision, signal/image processing and machine learning. Research focuses on novel theory, state-of-the-art algorithms, architectures, real-time implementations for biomedical engineering, human and machine-centric recognition, environmental and geoscience applications, and computer-aided medical diagnosis systems. Director: Khan Iftekharuddin.

## Special Programs

### Cooperative Education Program

The cooperative education programs in the Frank Batten College of Engineering and Technology at Old Dominion University are of the highest academic quality. These programs allow students to combine academic study with professional-level training. Cooperative education positions are based on the alternating program style in which periods of full-time study are alternated with periods of full-time employment. Full-time employment periods must accumulate to the equivalent of one calendar year. Participation in the cooperative education program can be a source of financial support to help meet a substantial portion of college expenses. All departments in the Frank Batten College of Engineering and Technology strongly endorse the concept of cooperative education.

### Accelerated Bachelor's/Master's Degree Programs

These are designed to allow qualified students to secure a space in a master's program available in the Frank Batten College of Engineering and Technology while they are still pursuing their undergraduate degrees. An eligible student can choose a master's program in the same discipline as his/her bachelor's program or in a complementary discipline. Subject to the approval of the undergraduate and graduate program directors, a student enrolled in an accelerated program can count up to six credit hours of course work towards both the undergraduate and the graduate degrees. Full-time students can complete the requirements for the bachelor's degree in four years and the master's degree in one additional year.

Students who are matriculated in an undergraduate major in the Frank Batten College of Engineering and Technology with a GPA of at least 3.00 overall and 3.00 in the major are eligible to apply for admission to an accelerated

bachelor's/master's program. Transfer students who desire to be admitted to an accelerated program at the time they join an undergraduate major at Old Dominion University are eligible to apply if their overall GPA at their previous institution is 3.25 or higher. Prerequisite courses may be required for engineering technology majors to pursue a master's degree in engineering.

Continuance in an accelerated bachelor's/master's program requires maintenance of a GPA of 3.00 or higher overall and in the major.

## Old Dominion University/Eastern Virginia Medical School Joint Program in Medicine

The joint program in medicine is designed to encourage highly qualified students to receive a B.S. from Old Dominion University and an M.D. from Eastern Virginia Medical School. Students apply after completion of their freshman year at Old Dominion University. Upon successful completion of requirements and graduation from Old Dominion University, a student accepted in the ODU/EVMS Joint Program in Medicine will be guaranteed admission to Eastern Virginia Medical School. Engineering and engineering technology students are encouraged to apply for this program. Complete information can be found in the College of Sciences section of this catalog.

## Bachelor-to-Ph.D. Programs

For a select number of exceptionally well-qualified students, the college has established an accelerated doctoral program that enables students to be admitted directly into the Ph.D. program upon completion of the baccalaureate degree. The total number of graduate course credits required is 48 plus a 24-credit dissertation. That is six credit hours shorter than the regular path, where a student would obtain a master's degree and then pursue Ph.D. study. The philosophy of the college is that the quality of the dissertation is judged more by the quality of research performed, rather than by the number of courses taken.

A select number of exceptionally well-qualified students can be admitted to the Bachelor/Ph.D. program while they are pursuing their junior year in one of the undergraduate programs at Old Dominion University. This program encourages admitted students to work closely with faculty members and pursue a research experience. Just as in the five-year Bachelor/M.S. program, six credit hours of graduate course work may again be counted towards the undergraduate degree and doctoral course work mentioned above for the Bachelor/Ph.D. program. Therefore, the total graduate credit hours after obtaining the bachelor's degree at Old Dominion can be 42 credit hours of graduate courses plus a 24-credit dissertation. That is 12 credits shorter than the regular path. Students in these programs must maintain a GPA of 3.50 or better throughout their bachelor's and doctoral studies.

The student may opt to obtain the master's degree along the way to the doctorate. To obtain the master's degree, the student must utilize the six graduate credits obtained as part of their undergraduate program, use 18 credits of the graduate course work that is part of the Ph.D., and also write a master's thesis.

## Undergraduate Programs

The Bachelor of Science in Civil Engineering, the Bachelor of Science in Computer Engineering, the Bachelor of Science in Electrical Engineering and the Bachelor of Science in Mechanical Engineering are accredited as engineering programs by:

Engineering Accreditation Commission (EAC) of ABET  
415 N. Charles Street  
Baltimore, MD 21202-4012  
Telephone: (410) 347-7700.

The Bachelor of Science in Modeling and Simulation Engineering plans to apply for accreditation by the Engineering Accreditation Commission (EAC) of ABET when it becomes eligible following the graduation of the first senior class in 2013.

The Bachelor of Science in Engineering Technology has programs in civil engineering technology, electrical engineering technology, and mechanical

engineering technology that are accredited as engineering technology programs by:

Engineering Technology Accreditation Commission (ETAC) of ABET  
415 N. Charles Street  
Baltimore, MD 21202-4012  
Telephone: (410) 347-7700.

## Engineering Fundamentals Division

Linda Vahala, Director

Bonita Anthony, Assistant Director

The Engineering Fundamentals Division (EFD) is designed to provide support to students as they make the transition into the Frank Batten College of Engineering and Technology. All students are admitted to this division until they are prepared to successfully take courses in their major. While in this division, students receive individualized counseling, mentoring, and advising support designed to prepare them for success in their chosen engineering or technology major. A key experience for students in this division is the year-long course in the Fundamentals of Engineering. This group-oriented course uses hands-on projects to expose students to the spectrum of engineering practices from innovation through design, manufacture and commercialization of a product or process. It also provides students with an opportunity to experience various aspects of engineering and have a basis for selecting their major.

## Admission

Students who qualify for regular admission to the University will be accepted into EFD. Students in EFD may identify a desired degree program or may declare that they are undecided among engineering and engineering technology programs. They will be assigned an intended major code classification, which indicates that they are enrolled and, if appropriate, which is their preferred program.

## Matriculation into a Degree Program

Students should apply to the desired program during the semester in which they complete the requirements in the Engineering Fundamentals Division. Students will be notified of the admission decision upon satisfying these requirements:

1. complete the course Explore Engineering and Technology
2. complete at least 30 credit hours applicable toward a degree
3. have an overall GPA of 2.00 or higher
4. meet any other additional degree program admission requirements.

Normally, students are not eligible to enroll in major courses until they are accepted into the degree program. Students may petition to waive this rule when extenuating circumstances warrant.

## Continuance

Students are eligible to continue in the EFD as long as they:

1. meet the continuance regulations of the University and
2. make reasonable progress toward matriculation into an engineering or engineering technology program.

A student who has ceased reasonable progress toward matriculation into a college degree program will be notified in writing. One semester following this notification, if reasonable progress has not resumed, the student will be referred to the Center for Major Exploration. A student who successfully completes the requirements must apply to and be accepted by a college degree program. Students not accepted into a degree program during a period of one semester beyond completion of the requirements will be referred to the Center for Major Exploration.

## Computer Requirement

The Frank Batten College of Engineering and Technology requires that all incoming freshmen to the college have a notebook or laptop computer that meets or exceeds the Mobile Monarch Student Notebook Program's recommended models for engineering majors. Students are strongly

encouraged to consider purchasing one of the Mobile Monarch Student Notebook Program's notebooks; however, students may bring their own notebook if it meets the specifications. More information, including the notebook loaner program, can be found at: <http://www.eng.odu.edu/efd>

## Engineering Fundamentals—Engineering Programs

The following courses are to be taken Freshman year.

### Freshman First Semester

ENGN 110	Explore Engineering and Technology	2
MATH 211	Calculus I	4
CHEM 121N	Foundations of Chemistry I Lecture	3
CHEM 122N	Foundations of Chemistry I Laboratory	1
ENGL 110C	English Composition (grade of C or better required)	3
GEN ED - Way of Knowing		3
Total Hours		16

### Freshman Second Semester

CEE 111 or ECE 111 or MAE 111 or MSIM 111 or ENGT 111	Information Literacy and Research * Information Literacy and Research for Electrical and Computer Engineering Mechanical and Aerospace Engineering Information Literacy and Research Information Literacy and Research for Modeling and Simulation Engineers Engineering Technology Information Literacy/Research	2
MATH 212	Calculus II	4
CHEM 123N	Foundations of Chemistry II Lecture	3
PHYS 231N	University Physics	4
CS 150	Problem Solving and Programming I	4
Total Hours		17

\* Meets information literacy and research general education requirement in conjunction with courses in the major.

## Engineering Fundamentals—Engineering Technology Programs

Refer to the program curriculum listing appearing in the Engineering Technology section.

### Advanced Placement

The University provides for possible advanced placement for up to 60 semester hours of course work. The student should refer to the advanced placement policy of specific departments (Mathematics and Statistics, Physics, Chemistry and Biochemistry, etc.) and the Policy for Experiential Learning Credit Options at the Undergraduate Level found in this Catalog.

Qualified students may take advanced placement examinations in certain courses in the various departments of the Batten College of Engineering and Technology. The student should contact the chair of the department offering the course for information on applicability and approval.

Prospective freshmen are encouraged to take as many advanced placement courses as possible in high school. Further, prospective freshmen are encouraged to take as many AP examinations of the Educational Testing Service and CLEP examinations as possible. Qualifying scores on these examinations may result in advanced placement credit. However, freshmen should still consult with their faculty advisor before "skipping" courses given at Old Dominion University.

### Transfer Students

Transfer students seeking admission to an engineering or engineering technology program at Old Dominion University must complete the standard admission procedures as established by the Office of Admissions.

Transfer students are usually in one of the following categories:

1. students who have completed some course work, but who have not completed associate degrees
2. students who have completed associate degrees in appropriate fields before transferring.

Certain special policies have been developed for students in category (b). If the overall educational background of the transfer student who has completed an associate degree is felt to be sufficiently strong to permit him or her to pursue upper-division work satisfactorily, a composite or "package" evaluation of transfer credit may be made. This approach will permit some flexibility in accommodating students with slightly different but equally appropriate backgrounds, dependent on the engineering or engineering technology program involved. Certain deficiencies can be made up while the student is pursuing upper-division studies.

To be admitted as a transfer student with departmental junior standing, the student should have either completed an associate degree in an acceptable program or received full credit for two years of work indicated by the completion of the equivalent number of semester hours in the chosen engineering or engineering technology curriculum with a grade of C or better in each course.

Transfer students must earn a minimum of 25 percent of the total number of credits required for the degree from Old Dominion University and complete a minimum of 12 credit hours in upper-level courses in the major program from Old Dominion University.

## Certificate of Career Experience

The Certificate of Career Experience provides an opportunity to document career experience contained in the student's program of study. The certificate consists of a five-credit core including cooperative education, job search strategies, and fundamentals of engineering. The remaining requirements are satisfied by major courses including senior design projects, professional communication and elective courses. Information concerning specific requirements is available on the Career Management Center website.

## Civil and Environmental Engineering

Gary C. Schafran, Chair

The Department of Civil and Environmental Engineering offers an undergraduate four-year program leading to the Bachelor of Science in Civil Engineering. The program is accredited by the Engineering Accreditation Commission (EAC) of ABET, <http://www.abet.org>. The department also offers a varied program of graduate study and research leading to the Master of Science, Master of Engineering, Doctor of Engineering, and Doctor of Philosophy degrees with majors in civil or environmental engineering. Areas of specialization include coastal, environmental, geotechnical, hydraulics and water resources, transportation, and structural engineering. For further information, please visit the web site: [eng.odu.edu/cee](http://eng.odu.edu/cee).

## Bachelor of Science in Civil Engineering

The undergraduate degree in civil engineering prepares graduates for entry into professional practice and continued intellectual and professional development throughout their career. The program prepares its graduates to serve as master planners, designers, constructors, and operators/managers of the built environment as well as stewards of natural resources and the environment. Civil engineering graduates are also prepared to serve as both innovators and integrators in the application of existing and developing technologies in the creation and maintenance of society's infrastructure. They also serve as evaluators and managers of risk and uncertainty and apply engineering knowledge and science to the protection of the built environment and public health.

The curriculum in civil engineering is designed to provide education in fundamental engineering sciences, certain nontechnical subjects, and all major areas of civil engineering, which will serve as a basis for entrance into civil engineering practice and/or graduate study. Technical elective

courses are available that allow pursuit of several programs of study or specialization:

- geotechnical
- hydraulics and water resources
- environmental
- transportation
- structural engineering

In addition, course work in General Education skills and ways of knowing is required to assure a well-rounded program of study.

### Civil Engineering Program Objectives

The program educational objectives describe the expected accomplishments of graduates during the first few years after graduation. The educational objectives of the civil engineering program, established with participation of all constituencies, are consistent with the mission of Old Dominion University and the Department of Civil and Environmental Engineering.

The objectives of the civil engineering program are to produce graduates who will:

- Practice civil engineering successfully in different professional settings
- Be able to pursue advanced studies in civil engineering or related fields
- Understand and effectively communicate technical, environmental, and social implications of civil engineering solutions
- Understand, appreciate, and be able to apply the state-of-the-art practice in civil engineering
- Understand, appreciate, and apply engineering ethics

### Civil Engineering Program Outcomes

The program outcomes are statements that describe what students are expected to know and be able to do by the time of graduation. The program outcomes have been established based on the program educational objectives, in consultation with the advisory council as documented in the minutes of the Civil and Environmental Engineering Visiting Council (CEEVC) meetings.

Students who qualify for graduation will:

1. Be proficient in mathematics through differential equations, probability and statistics, calculus-based physics, general chemistry, and engineering science and have the ability to apply knowledge in these areas to civil engineering problems.
2. Have ability to design and conduct experiments and to critically analyze and interpret data in various civil engineering fields.
3. Be able to develop design criteria to meet desired needs and to design a civil engineering system, component, or a process satisfying these criteria.
4. Have ability to function on multi-disciplinary teams.
5. Be able to identify and formulate an engineering problem, to collect and analyze relevant data, and to develop a solution.
6. Understand and appreciate professional and ethical responsibilities and professional practice issues such as procurement of work, bidding versus quality-based selection processes, and interaction between design and construction professionals.
7. Be able to effectively present ideas and technical material to diverse audiences in writing, visually, and verbally.
8. Have the broad education necessary to understand the impact of engineering solutions in a societal and global context.
9. Understand and appreciate the importance of professional licensure and commitment to life-long learning.
10. Have knowledge of current issues and awareness of emerging technologies.
11. Have an ability to use modern engineering techniques, skills, and tools including computer-based tools for civil engineering analysis and design.

In addition, students will have had opportunities for work experience through internships, practicum, and cooperative education. They will also have had opportunities to participate in student organizations for exposure to community service and for developing leadership skills. The students will be able to apply knowledge in environmental, geotechnical, structural, transportation, and water resources engineering.

### Civil Engineering Curriculum\*

#### Freshman

First Semester	Hours	Second Semester	Hours
MATH 211	4	MATH 212	4
CHEM 121N	3	CHEM 123N	3
CHEM 122N	1	PHYS 231N	4
ENGL 110C (grade of C or better required)	3	CS 150	4
ENGN 110	2	CEE 111	2
Gen Ed - Human Creativity Way of Knowing	3		
	<b>16</b>		<b>17</b>

#### Sophomore

First Semester	Hours	Second Semester	Hours
CEE 204	3	MAE 220	3
PHYS 232N	4	MAE 205	3
MATH 312 (285)	4	CET 319	1
Science Elective		ENGL 211C (grade of C or better required)	3
OEAS 111N or BIOL 110N (and BIOL 111N)	4	MATH 307 (280)	3
COMM 101R	3	Gen Ed - Literature Way of Knowing	3
	<b>18</b>		<b>16</b>

#### Junior

First Semester	Hours	Second Semester	Hours
CEE 320	3	CEE 310	3
CEE 305	3	CEE 323	3
CEE 330	3	CEE 340	3
CEE 350	3	CEE 335	1
CEE 304	3	CEE 240	3
		Gen Ed - Interpreting the Past Way of Knowing	3
	<b>15</b>		<b>16</b>

#### Senior

First Semester	Hours	Second Semester	Hours
CEE 470	3	CEE 403W (grade of C or better required)	3
CEE 410	3	CEE 4XX	3
CEE 430	3	CEE 4XX - Transportation or Environmental	3

ENGN 401	1	ENMA 480**	3
CEE 402	1	Gen Ed - Upper Level Requirement 2	3
Gen Ed - Human Behavior Way of Knowing	3		
Gen Ed - Upper Level Requirement 1	3		
	<b>17</b>		<b>15</b>

Total credit hours: 130

\* Does not include the University's General Education language and culture requirement. Additional hours may be required.

\*\* Meets philosophy and ethics general education requirement.

The General Education requirements in information literacy and research, impact of technology, and philosophy and ethics are met through the major.

## Electrical and Computer Engineering

Khan Iftekharuddin, Chair

Oscar Gonzalez, Associate Chair

The Department of Electrical and Computer Engineering offers undergraduate four-year degree programs leading to the Bachelor of Science in Electrical Engineering and the Bachelor of Science in Computer Engineering. These programs are accredited by the Engineering Accreditation Commission (EAC) of ABET, <http://www.abet.org>. The undergraduate programs provide a broad foundation in electrical and/or computer engineering through combined lecture and laboratory work and prepare the student for entering the profession of electrical and/or computer engineering. In addition, these programs prepare the students for further study at the graduate level.

The department also offers programs of graduate study leading to the degrees of Master of Engineering and Master of Science in electrical and computer engineering and Doctor of Philosophy in electrical and computer engineering. Faculty members in electrical and computer engineering are actively engaged in research, and the department maintains extensive laboratory facilities to support the research work. Areas of specialization include biomedical engineering, bioelectrics, plasmas, microelectronics/nanotechnology, photovoltaics, atomic layer deposition, laser processing, multivariable systems/nonlinear control, computational intelligence and machine vision, signal and image processing, modeling/simulation/visualization, medical modeling, computer networks, and communications.

Students majoring in either electrical engineering or computer engineering may fulfill the upper-level General Education requirements through completion of a minor in the other discipline. Additionally, computer engineering students automatically meet this requirement with the built-in minor in computer science.

### Mission Statement

The Department of Electrical and Computer Engineering at Old Dominion University is a partnership among students, faculty and staff in Service to the profession of Electrical and computer engineering through academic excellence, Research and real-world experiences, dedicated to a Vision of the future that includes Industry and community, Continuous improvement, and personal Enrichment and growth (SERVICE).

## Bachelor of Science in Electrical Engineering

Vishnu K. Lakdawala, Chief Departmental Advisor

The electrical engineering undergraduate curriculum begins with a solid foundation in math, science, English, circuits, signals and linear systems, electronics, electromagnetics, digital systems, and microelectronics. Adequate elective freedom is available to the senior student to allow specialization in three emphasis areas: system science, physical science, and digital design. Emphasis is placed on understanding principles through theoretical investigation and experimental verification. In addition, course work in General Education skills and Ways of Knowing are required to assure a well-rounded program of study.

## Electrical Engineering Educational Program Objectives

The electrical engineering program seeks to prepare graduates who, after the first few years of their professional career, have:

1. established themselves as practicing engineering professionals in industry or government, or engaged in graduate study
2. demonstrated their ability to work successfully as members of a professional team and function effectively as responsible professionals
3. demonstrated their ability to adapt to new technology and career challenges

## Program Outcomes

The electrical engineering program outcomes are as follows. Graduates must attain:

1. an ability to apply knowledge of mathematics, science, and engineering.
2. an ability to design and conduct experiments, as well as to analyze and interpret data.
3. an ability to design an electrical system, component, or process to meet desired needs, considering all realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
4. an ability to function on both intra-disciplinary and multi-disciplinary teams.
5. an ability to identify, formulate, and solve electrical engineering problems.
6. an understanding of professional and ethical responsibilities.
7. an ability to communicate technical ideas effectively in writing and speaking.
8. the broad education necessary to understand the impact of electrical engineering solutions in a global and societal context.
9. a recognition of the need for and an ability to engage in life-long learning.
10. a knowledge of contemporary issues.
11. an ability to use the techniques, skills, and modern engineering tools necessary for electrical engineering practice.

## Electrical Engineering Curriculum\*

### Freshman

First Term	Hours	Second Term	Hours
ENGN 110	2	ECE 111	2
CHEM 121N	3	CHEM 123N	3
CHEM 122N	1	MATH 212	4
MATH 211	4	CS 150	4
ENGL 110C (grade of C or better required)	3	PHYS 231N	4
COMM 101R	3		
	<b>16</b>		<b>17</b>

## Sophomore

First Term	Hours	Second Term	Hours
MATH 307 (280)	3	ECE 202	3
ECE 201	3	ECE 287	2
ECE 241	4	Non-major Engineering Elective	3
PHYS 232N	4	MATH 312 (285)	4
Interpreting the Past Way of Knowing	3	Human Creativity Way of Knowing	3
	<b>17</b>		<b>15</b>

## Junior

First Term	Hours	Second Term	Hours
ECE 302	3	ECE 304	3
ECE 303	3	ECE 387	3
ECE 313	4	ECE 323	3
ECE 332	3	ENGL 231C (grade of C or better required)	3
ECE 381	3	Literature Way of Knowing	3
	<b>16</b>		<b>15</b>

## Senior

First Term	Hours	Second Term	Hours
ECE 485W (grade of C or better required)	3	ECE 487	2
ECE 486	2	ECE Technical Elective	3
ECE Technical Elective	3	ECE Technical Elective	3
ECE Technical Elective	3	Human Behavior Way of Knowing	3
ENMA 480**	3	Upper-Division General Education course	3
Upper-Division General Education course	3		
	<b>17</b>		<b>14</b>

Total credit hours: 127

\* Does not include the University's General Education language and culture requirement. Additional hours may be required.

\*\* Meets philosophy and ethics general education requirement.

The General Education requirements in information literacy and research, impact of technology, and philosophy and ethics are met through the major.

Electrical engineering majors must earn a grade of C or better in all 200-level ECE courses prior to taking the next course in the sequence.

## Bachelor of Science in Computer Engineering

Vishnu K. Lakdawala, Chief Departmental Advisor

The computer engineering undergraduate degree program is designed to provide both a broad engineering background and a comprehensive

foundation in the technical principles underlying the computer area. Students develop a background through course work in mathematics, the basic sciences, and general engineering. The technical core consists of course work from electrical engineering to address hardware aspects of computer engineering and course work from computer science to address software aspects. Adequate elective freedom is available to senior students to allow specialization in four emphasis areas: modeling and simulation, computer hardware, computer networks and signal/image processing. In addition, course work in General Education Skills and Ways of Knowing is required to assure a well-rounded program of study.

## Computer Engineering Educational Program Objectives

The computer engineering program seeks to prepare graduates who, after the first few years of their professional career, have:

1. established themselves as practicing engineering professionals in industry or government, or engaged in graduate study
2. demonstrated their ability to work successfully as members of a professional team and function effectively as responsible professionals
3. demonstrated their ability to adapt to new technology and career challenges.

## Program Outcomes

The computer engineering program outcomes are as follows. Graduates must attain:

1. an ability to apply knowledge of mathematics, science, and engineering.
2. an ability to design and conduct experiments, as well as to analyze and interpret data.
3. an ability to design a digital hardware and/or software system to meet desired needs, considering all realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
4. an ability to function on both intra-disciplinary and multi-disciplinary teams.
5. an ability to identify, formulate, and solve computer engineering problems.
6. an understanding of professional and ethical responsibilities.
7. an ability to communicate technical ideas effectively in writing and speaking.
8. the broad education necessary to understand the impact of computer engineering solutions in a global and societal context.
9. a recognition of the need for and an ability to engage in life-long learning.
10. a knowledge of contemporary issues.
11. an ability to use the techniques, skills, and modern engineering tools necessary for computer engineering practice.

## Computer Engineering Curriculum\*

### Freshman

First Term	Hours	Second Term	Hours
ENGN 110	2	ECE 111	2
CHEM 121N	3	CHEM 123N	3
CHEM 122N	1	MATH 212	4
MATH 211	4	CS 150	4
ENGL 110C (grade of C or better required)	3	PHYS 231N	4
COMM 101R	3		
	<b>16</b>		<b>17</b>



## Sophomore

First Term	Hours	Second Term	Hours
MATH 307 (280)	3	ECE 202	3
ECE 201	3	ECE 287	2
ECE 241	4	CS 250	4
PHYS 232N	4	CS 252	1
Literature Way of Knowing	3	CS 381	3
		ENGL 231C (grade of C or better required)	3
	<b>17</b>		<b>16</b>

## Junior

First Term	Hours	Second Term	Hours
ECE 302	3	ECE 304	3
ECE 313	4	ECE 346	3
ECE 341	3	CS 350	3
CS 361	3	ECE Technical Elective	3
ECE 381	3	Human Creativity Way of Knowing	3
	<b>16</b>		<b>15</b>

## Senior

First Term	Hours	Second Term	Hours
ECE 484W (grade of C or better required)	3	ECE 487	2
ECE 486	2	CS 471	3
ECE 443	3	ECE Technical Elective	3
ECE Technical Elective	3	ECE Technical Elective	3
ENMA 480**	3	Human Behavior Way of Knowing	3
Interpreting the Past Way of Knowing	3		
	<b>17</b>		<b>14</b>

Total credit hours: 128

\* Does not include the University's General Education language and culture requirement. Additional hours may be required.

\*\* Meets philosophy and ethics general education requirement.

The General Education requirements in information literacy and research, impact of technology, and philosophy and ethics are met through the major. The upper-division General Education requirement is met through a built-in minor in computer science.

Computer engineering majors must earn a grade of C or better in all 200-level ECE courses prior to taking the next course in the sequence.

## Continuance Regulations

It is the policy of the Department of Electrical and Computer Engineering to deny a student eligibility to enroll in ECE courses after it becomes evident that he or she is either unable or unwilling to maintain reasonable standards of academic achievement. At the end of each semester, including summer sessions, the department reviews the records of all students.

1. A student will be placed on departmental academic probation whenever his or her major grade point average falls below 2.00 (after six or more hours have been attempted in the major.)
2. A student is subject to termination from the departmental engineering program if his or her record shows one of the following:
  - a. A deficiency of more than nine grade points below that required to maintain a 2.00 cumulative average in the major. This rule applies to students who have attempted fewer than 35 hours of their departmental engineering courses, including transfer hours.
  - b. A deficiency of more than six grade points below that required to maintain a 2.00 cumulative average in the major. This rule applies to students who have attempted 35 hours or more of their departmental engineering courses, including transfer hours.

Appeals of termination from the engineering program are in order if extenuating circumstances warrant. Appeals are to be made in writing to the chair of the department. Once the appeal is submitted, it is considered by the faculty of the department.

## Engineering Technology

Alok Verma, Chair

The primary goal of the Department of Engineering Technology and its programs is to provide a general yet sufficiently specialized education to equip the student for immediate employment in a variety of engineering and technical fields. In general, the engineering technology programs provide an opportunity for students who desire a technical undergraduate education with an emphasis directed toward applications of engineering knowledge to solve actual industrial problems. As a result, the engineering technology programs emphasize the practical application of technical knowledge with a strong laboratory program supporting the lecture content of the curricula. For further information, please visit the department web site: <http://www.odu.edu/engtech>.

## Mission Statement

The mission of the Engineering Technology Department is to provide students with preeminent, nationally recognized engineering technology programs that carefully balance theory, robust applied laboratory and engaging classroom experiences designed to serve as a strong foundation of knowledge and skills, enabling graduates to seize opportunities in traditional and emerging careers in civil, electrical and mechanical engineering technology.

The Department of Engineering Technology offers two program categories leading to the Bachelor of Science in Engineering Technology degree. The first program category includes programs that are accredited by the Engineering Technology Accreditation Commission (ETAC) of ABET, <http://www.abet.org>. The programs in this category are civil engineering technology (CET), electrical engineering technology (EET), and mechanical engineering technology (MET). Graduates of ETAC of ABET accredited programs are eligible to take the Fundamentals of Engineering (FE) or the Fundamentals of Land Surveying (FLS) examination in Virginia and in most states. The exam is the first step to licensure as a professional engineer. The programs in this category also offer different options and areas of specialization to meet student interests and industry needs. These options and areas of specialization are listed under each program.

The Department of Engineering Technology also offers a second type of degree option: the Bachelor of Science in Engineering Technology with a program in general engineering technology (GET). This program is designed for students with military training and education in mechanical or electrical engineering technology. The diverse technical education and career background of these students often requires an interdisciplinary mixture of courses utilizing more than one engineering technology field to meet specific educational and career objectives. The GET program meets this objective. The GET program includes the electromechanical systems option. Other options may be developed in coordination with the general engineering technology program advisor.

All upper-level courses required for all engineering technology programs are delivered via distance learning through ODU's distance learning system.

Thus, students with associate degrees may complete degree requirements without attending the main campus.

## Computer Requirement

The Frank Batten College of Engineering and Technology requires that all incoming freshmen to the college have a notebook or laptop computer that meets or exceeds the Mobile Monarch Student Notebook Program's recommended models for engineering majors. Students are strongly encouraged to consider purchasing one of the Mobile Monarch Student Notebook Program's notebooks; however, students may bring their own notebook if it meets the specifications. More information, including the notebook loaner program, can be found at <http://www.odu.edu/efd>.

## Civil Engineering Technology

Nestor Escobales, Program Director

The Civil Engineering Technology (CET) program is accredited by the Engineering Technology Accreditation Commission (ETAC) of ABET, <http://www.abet.org/>. The CET program offers areas of specialization in construction management, structural design, and site development. Students in this program are prepared for employment in a wide range of professional and technical positions with the construction, consulting engineering, surveying and site development industries. Graduates are eligible to take the Fundamentals of Engineering exam, the first step to licensure as a professional engineer. CET courses include topics such as computer-aided drafting, statics, strength of materials, materials testing, surveying, building construction, steel and concrete design, soils and foundations, and hydrology and drainage. Effective written, oral and graphic communications are practiced throughout the curriculum along with computer literacy. The program culminates in a senior project that integrates course work with a practical project assignment in the student's area of interest. To satisfy the upper-division general education requirements, students are encouraged to complete a minor in engineering management, business management, environmental health and safety, or mechanical engineering technology.

## Construction Management Area of Concentration

This option prepares students for careers in the construction industry by providing a combination of knowledge and skills from a number of disciplines. In addition to the basic technical skills in structures, materials, fluids, etc., students in construction management take courses in scheduling, project management, cost estimating, and other topics that enable projects to be completed on schedule and within budget. Graduates of the construction management area of concentration are employed at both large and small companies as project engineers, field engineers, assistant superintendents, estimators, schedulers, and similar construction related positions.

## Structural Design Area of Concentration

This option prepares students for careers in both the public and private sectors. In addition to the basic technical skills in statics, strength of materials, structural analysis, etc., students concentrating in structural design take courses in computer applications in structural design, structural steel, reinforced concrete, wood design, design of structural systems, and environmental loads. Graduates from this concentration have found employment at both large and small companies as design engineers, project engineers, structural engineers, and similar structural related positions.

## Site Development Area of Concentration

This option prepares students to develop survey plans, prepare subdivision plats, design site improvements, obtain approvals and entitlements, and provide turn-key services to manage developments. Students choosing this area of concentration will take course work in hydrology and drainage, land design and development, boundary law, and hydraulic engineering. Graduates from this concentration are employed in government agencies, engineering firms and surveying firms.

## Civil Engineering Technology Program

### Mission Statement

The mission of the Civil Engineering Technology (CET) program is to sustain a high quality undergraduate program of study leading to the

Bachelor of Science in Engineering Technology degree. The program prepares graduates to become certified in their area of specialization. Civil engineering technology is a significant component of the University's commitment to science, engineering and technology, particularly in structural design, construction, site development and related fields, which are of major importance to civilization. Students around the world are enabled to expand opportunities to enhance their education and pursue baccalaureate level studies through the University's distance learning program. Simultaneously, the program supports the general education components that yield a well-rounded graduate who is aware of and able to address societal needs and issues.

### Program Objectives

The objective of the Civil Engineering Technology program is to prepare graduates to establish themselves as successful professionals in structural building design, construction, and surveying/land design or related areas during the first few years of their careers by having demonstrated their ability to:

1. Address and solve increasingly complex technical problems related to one's professional field and area of specialization.
2. Make well educated, responsible and ethical decisions that will have a positive impact on organization and society.
3. Work effectively in teams and precisely communicate ideas.
4. Continue personal and professional growth.

Typical technical problems that CET graduates will be able to address include: building and non-building type structures and construction operations. Typical technical tasks the CET graduates will be expected to perform include: planning and design, field testing and inspection, on-site technical coordination and control, and other tasks relevant to one's emphasis area.

### Program Outcomes

The civil engineering technology program has adopted, after deliberations by its constituents, 11 outcomes for the Bachelor of Science program in civil engineering technology. These outcomes are listed below.

1. an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
2. an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies;
3. an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;
4. an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
5. an ability to function effectively as a member or leader on a technical team;
6. an ability to identify, analyze, and solve broadly-defined engineering technology problems;
7. an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;
8. an understanding of the need for and an ability to engage in self-directed continuing professional development;
9. an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;
10. a knowledge of the impact of engineering technology solutions in a societal and global context; and
11. a commitment to quality, timeliness, and continuous improvement.

### Civil Engineering Technology Curriculum\*

Critical CET course sequences within the Civil Engineering Technology curricula require a minimum grade of C before progressing to subsequent

courses. Refer to the individual CET course descriptions for information on specific C grade prerequisites. A grade of C- does not satisfy the requirement for a C grade.

### Freshman

First Term	Hours	Second Term	Hours
CET 120	3	Human Creativity Way of Knowing	3
ENGN 110	2	ENGT 111	2
MATH 162M	3	MATH 163	3
CHEM 121N	3	PHYS 111N	4
CHEM 122N	1	ENGL 110C (grade of C or better required)	3
Human Behavior Way of Knowing	3		
	<b>15</b>		<b>15</b>

### Sophomore

First Term	Hours	Second Term	Hours
CET 200 (grade of C or better required)	3	CET 205	3
MATH 211 (grade of C or better required)	4	CET 220 (grade of C or better required)	3
PHYS 112N	4	CET 345W (grade of C or better required)	2
ENGL 211C (grade of C or better required)	3	EET 305	3
Literature Way of Knowing	3	COMM 101R	3
		Philosophy and Ethics Way of Knowing**	3
	<b>17</b>		<b>17</b>

### Junior

First Term	Hours	Second Term	Hours
CET 210	3	CET 340	3
CET 301	3	CET 341W (grade of C or better required)	2
CET Elective	3	CET 360****	3
CET 330	3	CET Elective	3
MET 335W (grade of C or better required)	1	ENMA 302	3
Upper Division Gen Ed***	3		
	<b>16</b>		<b>14</b>

### Senior

First Term	Hours	Second Term	Hours
CET 355	3	CET 410 or 450	3
CET 434	1	CET 475	3
CET 440	3	Two CET Electives	6

CET Elective	3	Impact of Technology Way of Knowing	3
Upper Division Gen Ed***	3		
Interpreting the Past Way of Knowing	3		
ENGN 401	1		
	<b>17</b>		<b>15</b>

Total credit hours: 126

\* Does not include the University's General Education language and culture requirement. Additional hours may be required.

\*\* ENMA 480 Ethics and Philosophy in Engineering Applications is preferred.

\*\*\* One or more additional courses will be required to complete a minor. See advisor for details.

\*\*\*\* Students with an interest in construction, design or site development may substitute an alternate course with approval of their advisor.

The General Education information literacy and research requirement is met through the major.

## Electrical Engineering Technology

John R. Hackworth, Program Director

The electrical engineering technology (EET) program is accredited by the Engineering Technology Accreditation Commission (ETAC) of ABET, <http://www.abet.org/>. The EET program contains both an electrical systems technology concentration and a computer engineering technology concentration. Students in either concentration take courses in dc and ac circuits, electronic devices and circuits, digital electronics, linear electronics, microprocessors, and programming. Supporting laboratories provide experience in instrumentation, testing and trouble-shooting, and design and implementation. Graduates should be qualified for application positions in electronic and electrical product design and development, electronic and electrical system operation and maintenance, field operations, and various other technical functions.

### Electrical Systems Technology Concentration

Students choosing the electrical systems technology concentration will take required courses in electrical power and machinery and transmission networks. The remainder of the technical program consists of senior electives in such areas as communications, high frequency and microwave technology, control systems, power systems, and other areas. To satisfy the upper-division general education requirement, students are required to complete any minor in the College of Engineering and Technology or the College of Sciences.

### Computer Engineering Technology Concentration

Students choosing the computer engineering technology (ComET) concentration will take a series of courses offered by both the Department of Engineering Technology and the Department of Computer Science. These include additional C++ programming and problem solving, data structures, and software engineering. The remainder of the program will consist of a combination of senior electives in computer science and specific electrical courses that support the computer engineering technology concentration. Computer engineering technology majors will automatically satisfy a minor in computer science.

## Electrical Engineering Technology Program

### Mission Statement

The mission of the Electrical Engineering Technology (EET) program is to sustain a high quality undergraduate program of study leading to the Bachelor of Science in Engineering Technology degree. It is a significant

component of the University's commitment to science, engineering and technology, particularly in fields of major importance to the region. Through the University's distance learning program, the electrical engineering technology program provides opportunities for technical personnel throughout the state and elsewhere to enhance their education and pursue baccalaureate level studies. Simultaneously, the program supports the general education components that yield a well-rounded graduate who is aware of societal needs and issues.

### Program Objectives

The objective of the electrical engineering technology program is to prepare graduates to establish themselves as successful professionals in electrical systems technology, computer engineering technology or related areas during the first few years of their careers by having demonstrated their ability to:

1. Address and solve increasingly complex technical problems related to one's professional field and area of specialization.
2. Make well educated, responsible and ethical decisions that will have a positive impact on organization and society.
3. Work effectively in teams and precisely communicate ideas.
4. Continue personal and professional growth.

Typical technical problems that EET graduates will be able to address include: planning, specification, development, design, procurement of equipment and materials, implementation, and performance verification. Typical technical tasks the EET graduates will be expected to perform include: conduct engineering experiments, make observations, collect and analyze data, and formulate conclusions.

### Program Outcomes

The electrical engineering technology program has adopted, after deliberations by its constituents, 11 outcomes for the Bachelor of Science program in electrical engineering technology. These outcomes are listed below.

1. an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
2. an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies;
3. an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;
4. an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
5. an ability to function effectively as a member or leader on a technical team;
6. an ability to identify, analyze, and solve broadly-defined engineering technology problems;
7. an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;
8. an understanding of the need for and an ability to engage in self-directed continuing professional development;
9. an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;
10. a knowledge of the impact of engineering technology solutions in a societal and global context; and
11. a commitment to quality, timeliness, and continuous improvement.

### Electrical Engineering Technology Curriculum

Critical EET course sequences within the Electrical Engineering Technology curricula require a minimum grade of C before progressing to subsequent courses. Refer to the individual EET course descriptions for information on

specific C grade prerequisites. A grade of C- does not satisfy the requirement for a C grade.

### Electrical Systems Technology Concentration\*

#### Freshman

First Term	Hours	Second Term	Hours
EET 120	3	EET 110	3
EET 125	2	ENGT 111	2
ENGN 110	2	MATH 163	3
MATH 162M	3	PHYS 111N	4
ENGL 110C (grade of C or better required)	3	Human Creativity Way of Knowing	3
Human Behavior Way of Knowing	3		
	<b>16</b>		<b>15</b>

#### Sophomore

First Term	Hours	Second Term	Hours
EET 200	3	EET 220	3
EET 205	2	EET 225	2
EET 210	3	Laboratory Science <sup>1</sup>	4
PHYS 112N	4	COMM 101R	3
MATH 211	4	ENGL 211C (grade of C or better required)	3
	<b>16</b>		<b>15</b>

#### Junior

First Term	Hours	Second Term	Hours
EET 300	3	EET 312	4
EET 305	3	EET 320	3
EET 310	3	EET 325	2
EET 315	2	EET 330	3
EET 360	3	Literature Way of Knowing	3
EET 365W	2	Interpreting the Past Way of Knowing	3
	<b>16</b>		<b>18</b>

#### Senior

First Term	Hours	Second Term	Hours
EET 335	2	EET 480W (grade of C or better required)	3
EET 434	1	Senior Elective (EET)	3
Senior Electives (EET)	3	Minor <sup>2</sup>	6
EET 370T	3	ENMA 480 <sup>3</sup>	3
Minor <sup>2</sup>	6		
	<b>15</b>		<b>15</b>

Total credit hours: 126

- \* Does not include the University's General Education language and culture requirement. Additional hours may be required.
- 1 CHEM 121N and CHEM 122N are recommended, especially for those who plan to take the Fundamentals of Engineering Examination.
- 2 Students must select from any minor in either the College of Engineering and Technology or the College of Sciences. Note that minors requiring more than four courses will increase the total credits required to complete the degree.
- 3 Meets philosophy and ethics general education requirement.

Senior Elective (EET)	3	COMM 101R	3
EET 370T	3	Human Creativity Way of Knowing	3
Senior Electives (CS)	6	ENMA 480 <sup>2</sup>	3
Interpreting the Past Way of Knowing	3		
<b>18</b>		<b>15</b>	

The General Education requirements in information literacy and research, impact of technology, and philosophy and ethics are met through the major.

Total credit hours: 128

### Computer Engineering Technology Concentration\*

#### Freshman

First Term	Hours	Second Term	Hours
EET 120	3	EET 110	3
EET 125	2	ENGT 111	2
ENGN 110	2	MATH 163	3
MATH 162M	3	PHYS 111N	4
ENGL 110C (grade of C or better required)	3	Laboratory Science <sup>1</sup>	4
Human Behavior Way of Knowing	3		
<b>16</b>		<b>16</b>	

#### Sophomore

First Term	Hours	Second Term	Hours
EET 200	3	EET 220	3
EET 205	2	ENGL 211C (grade of C or better required)	3
EET 210	3	MATH 211	4
PHYS 112N	4	CS 250	4
CS 150	4	CS 252	1
<b>16</b>		<b>15</b>	

#### Junior

First Term	Hours	Second Term	Hours
EET 300	3	EET 312	4
EET 305	3	EET 320	3
EET 310	3	EET 325	2
EET 315	2	EET 330	3
CS 361	3	CS 350	3
Literature Way of Knowing	3		
<b>17</b>		<b>15</b>	

#### Senior

First Term	Hours	Second Term	Hours
EET 335	2	EET 480W (grade of C or better required)	3
EET 434	1	Senior Elective (EET)	3

- \* Does not include the University's General Education language and culture requirement. Additional hours may be required.
- 1 CHEM 121N and CHEM 122N are recommended, especially for those who plan to take the Fundamentals of Engineering Examination.
- 2 Meets philosophy and ethics general education requirement.

The General Education requirements in information literacy and research, impact of technology, and philosophy and ethics are met through the major.

### Mechanical Engineering Technology

Cheng Y. Lin, Program Director

The mechanical engineering technology (MET) program is accredited by the Engineering Technology Accreditation Commission (ETAC) of ABET, <http://www.abet.org/>. The MET program offers areas of concentration in manufacturing systems, mechanical systems design, nuclear systems, and marine systems. Students in this program take common courses in areas such as computer-aided drafting, statics, strength of materials, dynamics, thermodynamics, fluid mechanics, automation and controls, and computer solid modeling. The program culminates in a senior project that integrates course work with a practical project assignment in the student's area of interest. To satisfy the upper-division general education requirements, students are required to complete a minor within the College of Engineering and Technology or the College of Sciences. Graduates should be qualified for application positions in mechanical product design, development and manufacturing, mechanical system operation and maintenance, field operations, and various other technical functions.

#### Manufacturing Systems Area of Concentration

Along with the courses previously mentioned, various senior electives are available in the manufacturing area such as robotics, computer numerical control in production, advanced manufacturing processes, and lean engineering. Graduates of the manufacturing systems area of concentration are prepared for employment in a wide range of professional and technical positions at both large and small companies in areas such as manufacturing engineering, quality control, production management, test engineering, and maintenance management.

#### Mechanical Systems Design Area of Concentration

The mechanical systems design area of concentration provides the skills for career success in designing, building, and installing mechanical systems of all descriptions including thermal and air conditioning systems, automated production equipment, and power systems. Graduates of this area of concentration are prepared for careers in engineering, fabrication, and technical positions in both the public and private sectors.

#### Nuclear Systems Area of Concentration

The nuclear systems area of concentration is a special program available only to graduates of the U. S. Navy Nuclear Power School or programs related to nuclear power plant operation through Dominion Energy. These students receive advanced standing credits that apply to the MET degree based on their professional education in nuclear power systems.

## Marine Systems Area of Concentration

Senior electives related to this area of concentration include: MET 475 Principles of Marine Engineering I, MET 476 Principles of Marine Engineering II, and MET 485 Maintenance Engineering. It should attract students interested in ships' systems operation and the shipbuilding/repair industry.

## Mechanical Engineering Technology Program

### Mission Statement

The mission of the Mechanical Engineering Technology (MET) program is to sustain a high quality undergraduate program of study leading to the Bachelor of Science in Engineering Technology degree. It is a significant component of the University's commitment to science, engineering and technology, particularly in fields of major importance to the region. Through the University's distance learning program, the mechanical engineering technology program provides opportunities for technical personnel throughout the state and elsewhere to enhance their education and pursue baccalaureate level studies. Simultaneously, the program supports the general education components that yield a well-rounded graduate who is aware of societal needs and issues.

### Program Objectives

The objective of the mechanical engineering technology program is to prepare graduates to establish themselves as successful professionals in mechanical systems or related areas during the first few years of their careers by having demonstrated their ability to:

1. Address and solve increasingly complex technical problems related to one's professional field and area of concentration.
2. Make well educated, responsible and ethical decisions that will have a positive impact on organization and society.
3. Work effectively in teams and precisely communicate ideas.
4. Continue personal and professional growth.

Typical technical problems that MET graduates will be able to address include: planning, specification, development, design, procurement of equipment and materials, implementation, and performance verification. Typical technical tasks the MET graduates will be expected to perform include: conduct engineering experiments, make observations, collect and analyze data, and formulate conclusions.

### Program Outcomes

The mechanical engineering technology program has adopted, after deliberations by its constituents, 11 outcomes for the Bachelor of Science program in mechanical engineering technology. These outcomes are listed below:

1. an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
2. an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies;
3. an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;
4. an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
5. an ability to function effectively as a member or leader on a technical team;
6. an ability to identify, analyze, and solve broadly-defined engineering technology problems;
7. an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;

8. an understanding of the need for and an ability to engage in self-directed continuing professional development;
9. an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;
10. a knowledge of the impact of engineering technology solutions in a societal and global context; and
11. a commitment to quality, timeliness, and continuous improvement.

## Mechanical Engineering Technology Curriculum\*

Critical MET course sequences within the Mechanical Engineering Technology curricula require a minimum grade of C before progressing to subsequent courses. Refer to the individual MET course descriptions for information on specific C grade prerequisites. A grade of C- does not satisfy the requirement for a C grade.

### Freshman

First Term	Hours	Second Term	Hours
MET 120	3	MET 240	3
ENGN 110	2	ENGT 111	2
MATH 162M	3	MATH 163	3
CHEM 121N	3	PHYS 111N	4
CHEM 122N	1	ENGL 110C (grade of C or better required)	3
Human Behavior Way of Knowing	3		
	<b>15</b>		<b>15</b>

### Sophomore

First Term	Hours	Second Term	Hours
MET 200	3	CET 220	3
CET 200	3	MET 225	1
MATH 211	4	STEM 221 or 231	3
PHYS 112N	4	COMM 101R	3
ENGL 211C (grade of C or better required)	3	Human Creativity Way of Knowing	3
		Gen Ed Literature	3
	<b>17</b>		<b>16</b>

### Junior

First Term	Hours	Second Term	Hours
MET 300	3	MET 330	3
MET 310	3	MET 335W	1
MET 320	3	MET 350	3
EET 305	3	MET 370**	3
EET 350	3	MET 386**	1
EET 355	1	ENMA 480***	3
		Minor ****	3
	<b>16</b>		<b>17</b>

### Senior

First Term	Hours	Second Term	Hours
MET 387	2	MET 435W (grade of C or better required)	3

MET 434	1 Senior Electives (MET)	6
ENGN 401	1 Minor****	6
Senior Electives (MET)	6	
Minor****	3	
Interpreting the Past Way of Knowing	3	
	<b>16</b>	<b>15</b>

Total credit hours: 127

\* Does not include the University's General Education language and culture requirement. Additional hours may be required.

\*\* Must be taken together.

\*\*\* Meets philosophy and ethics general education requirement.

\*\*\*\* Students must select from any minor in either the College of Engineering and Technology or the College of Sciences. Note that minors requiring more than four courses will increase the total credits required to complete the degree.

General Education requirements in information literacy and research, impact of technology, and philosophy and ethics are met through the major.

## General Engineering Technology

Alok Verma, Program Director  
Robert F. Curry, Program Advisor

The Bachelor of Science in Engineering Technology with a major in general engineering technology (GET) is designed for students with military training and education in mechanical or electrical engineering technology. Students obtain a concentration in electromechanical systems and a minor in engineering management. The degree program is included in the Navy College Program Distance Learning Partnership (NCPDLP), Air Force Associate's to Bachelor's Cooperative (A-B-C), Coast Guard Afloat Education, and Marine Corps Career College Program.

### Program Goals

The goals of the general engineering technology program are fully supportive of the mission of the University and can be summarized as follows:

- Provide broad-based engineering technology studies at the advanced level, combined with complementary engineering management studies.
- Enhance a student's career progression in either the military or a civilian capacity.
- Prepare graduates for positions in technical leadership or management that require knowledge of technology, as well as the ability to manage personnel and projects of an engineering nature.
- Provide a general education to improve the graduate's ability to communicate effectively and function as a responsible citizen.
- Develop and demonstrate a national model for delivering distance education utilizing state-of-the-art electronic media, including virtual laboratories and simulation tools.

### Lower Division General Education

To participate in this program, students must have at least 24 relevant military credits (based on ACE recommendations) that satisfy the required lower-division technical base.

#### Lower Division General Education

Written Communication Skills (grade of C or better required in both)	6
Oral Communication (COMM 101R preferred)	3
Language and Culture	0-6

Mathematical Skills	3
MATH 162M Precalculus I (required)	
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
PHYS 111N Introductory General Physics & PHYS 112N and Introductory General Physics	
Human Behavior	3
Impact of Technology	3
Total Hours	41-47

### Departmental Requirements

The following table details the required upper division courses, which are 14 hours in electrical engineering technology, 13 hours in mechanical engineering technology, and 12 hours in engineering management. All of the upper-division courses are available by distance learning in multiple formats, making the program accessible from any location.

#### Departmental Requirements

MATH 163	Precalculus II	3
MATH 211	Calculus I	4
EET 350	Fundamentals of Electrical Technology	3
EET 360	Electrical Power and Machinery	3
EET 365W	Electrical Power and Machinery Laboratory (grade of C or better required)	2
EET 410	Communication Principles	3
EET 415	Programmable Machine Controls	3
MET 300	Thermodynamics	3
MET 305	Fundamentals of Mechanics	3
MET 310	Dynamics	3
MET 330	Fluid Mechanics	3
MET 335W	Fluid Mechanics Laboratory (grade of C or better required)	1
ENMA 301	Introduction to Engineering Management	3
ENMA 302	Engineering Economics	3
ENMA 401	Project Management	3
ENMA 420	Statistical Concepts in Engineering Management	3
Department Technical Base		24
Free Electives		3-9
Total Hours		73-79

A minimum of 120 credit hours and a 2.0 grade point average in the major, minor and overall are required.

## Mechanical and Aerospace Engineering

Sebastian Bawab, Chair

Colin Britcher, Associate Chair

The Mechanical and Aerospace Engineering (MAE) Department offers an undergraduate program leading to a Bachelor of Science in Mechanical Engineering. The program is accredited by the Engineering Accreditation Commission (EAC) of ABET, <http://www.abet.org>. The Department offers varied programs of graduate study and research leading to the Master of Engineering, Master of Science, Doctor of Engineering and Doctor of Philosophy degrees in either Mechanical Engineering or Aerospace Engineering. For further information, please visit the Department's web site: [www.eng.odu.edu/mae](http://www.eng.odu.edu/mae).

# Bachelor of Science in Mechanical Engineering

Colin Britcher, Chief Departmental Advisor

The mechanical engineering program is among the most basic of all engineering programs, with a curriculum that embraces the major areas of power, design, and fluid or solid mechanics. Seniors may enroll in one of three concentration areas:

1. Power/energy conversion
2. Mechanical systems/design
3. Aerospace engineering

The program is designed to prepare its graduates for professional practice in many facets of engineering, such as research, development, design, planning, testing, management, and consulting. The graduate is prepared to undertake challenging and creative engineering work in almost any industry, government agency, research organization, or consulting firm. The program also provides an excellent preparation for graduate school and the Fundamentals of Engineering (FE) Exam.

An undergraduate student handbook providing rules and a detailed semester-by-semester plan for the program is available on the department's website. Courses are routinely scheduled in the evening to accommodate working students. Interested persons should contact the department at 683-6363.

## Mechanical Engineering Mission

1. To develop and maintain a high quality undergraduate program of study leading to the bachelor's degree in mechanical engineering.
2. To develop and maintain high quality graduate programs of study and research leading to master's and doctoral degrees in Mechanical Engineering or Aerospace Engineering.
3. To conduct a relevant and high quality research program in the mechanical and aerospace engineering disciplines.
4. To provide practicing mechanical and aerospace engineers in Virginia the opportunities to develop and maintain up-to-date technical knowledge and skills.
5. To provide the unique skills and knowledge required by the mechanical and aerospace engineering professions to support existing government agencies, consulting firms and industry and help promote the development of new and more competitive industries in Virginia and the nation.

## Outcomes

The Mechanical and Aerospace Engineering Department has adopted, after deliberations by its constituents, 11 outcomes for the BSME program. These outcomes are listed below. The students who qualify for graduation will:

1. Be proficient in mathematics through differential equations, probability and statistics, calculus-based physics, general chemistry, and engineering science and have the ability to apply knowledge in these areas to mechanical engineering problems.
2. Have ability to design and conduct experiments and to critically analyze and interpret data in various mechanical engineering fields.
3. Be able to 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.
4. Have ability to function on multi-disciplinary teams.
5. Be able to identify and formulate an engineering problem, to collect and analyze relevant data, and to develop a solution.
6. Understand and appreciate professional and ethical responsibilities and professional practice issues such as procurement of work and bidding versus quality-based selection processes.
7. Be able to effectively present ideas and technical material to diverse audiences in writing, visually, and verbally.
8. Have the broad education necessary to understand the impact of engineering solutions in a societal and global context.

9. Understand and appreciate the importance of professional licensure and commitment to life-long learning.
10. Have knowledge of current issues and awareness of emerging technologies.
11. Have an ability to use modern engineering techniques, skills and tools including computer-based tools for mechanical engineering analysis and design.

## Mechanical Engineering Objectives

The program's educational objectives describe the career and professional accomplishments that the program is preparing graduates to achieve within a few years after graduation. The educational objectives of the mechanical engineering program, established with participation of all constituencies, are consistent with the mission of Old Dominion University and the Department of Mechanical and Aerospace Engineering.

The objectives of the mechanical engineering undergraduate program at Old Dominion University are to prepare mechanical engineers:

1. To establish themselves as successful professionals in the general areas of thermal/fluid systems, mechanical systems and design, and materials and manufacturing in industry and government settings by demonstrating their ability to:
  - a. Conduct themselves consistently in a responsible, professional and ethical manner.
  - b. Participate in continuing education, research and development, and in other lifelong creative efforts in science and technology.
  - c. Lead others in support of activities that promote service to, and economic development of, the community, the region, state and nation.
2. To successfully pursue and complete graduate programs in mechanical engineering, aerospace engineering or a related field if they so desire.

## Mechanical Engineering Curriculum\*

### Freshman

First Term	Hours	Second Term	Hours
MATH 211	4	MATH 212	4
CHEM 121N	3	CHEM 123N	3
CHEM 122N	1	PHYS 231N	4
ENGL 110C (grade of C or better required)	3	CS 150	4
ENGN 110	2	MAE 111	2
COMM 101R	3		
	<b>16</b>		<b>17</b>

### Sophomore

First Term	Hours	Second Term	Hours
PHYS 232N	4	MAE 205	3
MATH 312 (285)	4	MAE 220	3
MAE 204	3	MAE 225	1
MAE 201	3	MATH 307 (280)	3
MAE 203	1	ENGL 231C (grade of C or better required)	3
MET 120	3	Interpreting the Past Way of Knowing	3
	<b>18</b>		<b>16</b>



<b>Junior</b>			
<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
MAE 303	3	MAE 312	3
MAE 305	1	MAE 332	3
MAE 311	3	MAE 315	3
MAE 340	3	ENGN 401	1
Literature Way of Knowing	3	Philosophy and Ethics Way of Knowing**	3
Human Creativity Way of Knowing	3	Human Behavior Way of Knowing	3
	<b>16</b>		<b>16</b>

<b>Senior</b>			
<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
MAE 433	3	MAE 435	3
MAE 434W	3	MAE Option Course	3
MAE 436	3	MAE Option Course	3
MAE Option Course	3	Upper-Division General Education course	3
Upper-Division General Education course	3		
	<b>15</b>		<b>12</b>

Total credit hours: 126

\* Does not include the University's General Education language and culture requirement. Additional hours may be required.

\*\* ENMA 480 is preferred.

General Education requirements in information literacy and research and impact of technology are met through the major. For additional information consult the department undergraduate handbook.

Mechanical engineering majors must earn a grade of C or better in the following courses in order to continue to progress through the program:

MATH 211	Calculus I	4
MATH 212	Calculus II	4
PHYS 231N	University Physics	4
MAE 204	Engineering Mechanics I - Statics	3
MAE 205	Dynamics	3
MAE 220	Engineering Mechanics II - Solid Mechanics	3
MAE 303	Mechanics of Fluids	3
MAE 311	Thermodynamics I	3
MAE 434W	Project Design and Management I	3

## Continuance Regulations

It is the policy of the Department of Mechanical and Aerospace Engineering to deny a student eligibility to enroll in program courses after it becomes evident that he or she is either unable or unwilling to maintain reasonable standards of academic achievement. Courses in the mechanical engineering major are defined as courses with an MAE prefix.

1. A student will be placed on departmental academic probation whenever his or her major grade point average falls below 2.00 (after six or more hours have been attempted in the major).
2. A student is subject to termination from the program if his or her record shows either of the following:

- a. A deficiency of more than nine grade points below that required to maintain a 2.00 cumulative average in the major. This rule applies to students who have attempted fewer than 35 hours in the major.
- b. A deficiency of more than six grade points below that required to maintain a 2.00 cumulative average in the major. This rule applies to students who have attempted 35 hours or more in the major.

Appeals of termination from the program are in order if extenuating circumstances warrant. Appeals are to be made in writing to the chair of the department. Once the appeal is submitted, it is considered by the faculty of the department.

## Modeling, Simulation and Visualization Engineering

Frederic D. McKenzie, Chair

The Department of Modeling, Simulation and Visualization Engineering (MSVE) offers an undergraduate four-year degree program leading to the Bachelor of Science in Modeling and Simulation Engineering (M&SE). The program was initiated in January 2010 and will seek accreditation by the Engineering Accreditation Commission (EAC) of ABET as a general engineering program in 2014. Program graduates are prepared to enter the workforce as entry-level modeling and simulation engineers. In addition, graduates are prepared to enter graduate study in modeling and simulation and, with appropriate use of elective freedom, other disciplines where modeling and simulation has application. Program graduates also are prepared to seek certification as a Certified Modeling and Simulation Professional (CMSP) and, with proper selection of electives, licensure as an Engineer in Training (EIT).

The department also offers programs of graduate study leading to the degrees of Master of Engineering, Master of Science, Doctor of Engineering, and Doctor of Philosophy with a major in modeling and simulation. The department's academic programs are coupled with a strong departmental research program conducted jointly with researchers from the Virginia Modeling, Analysis and Simulation Center (VMASC). Research activities range from investigation of fundamental modeling and simulation methodologies and technologies to applications of modeling and simulation in medicine and health care, transportation, education, science and engineering, and business.

### Vision Statement

MSVE will promote fundamental knowledge and skills in the discipline of modeling and simulation and will provide world leadership in modeling and simulation education and research.

### Mission Statement

MSVE serves the public globally with education and research in modeling and simulation through the following:

- Provide high quality undergraduate and graduate modeling and simulation engineering curricula via on-campus and distance learning.
- Conduct cutting edge research in modeling, simulation, and visualization engineering.
- Promote the discipline of modeling and simulation and its use in real-world practical applications.

## Bachelor of Science in

### Modeling and Simulation Engineering

James Leathrum Jr., Chief Departmental Advisor

The modeling and simulation engineering curriculum is based on a solid foundation in mathematics and basic science. Core program content includes a thorough introduction to key concepts from computer science, the major modeling and simulation paradigms, computer visualization, analysis methods, and simulation software design. Laboratory courses provide hands-on experience in the engineering of modeling and simulation systems. A capstone course sequence taken during the senior year provides

an opportunity to exercise this cumulative preparation to solve a real engineering problem in a team setting. An important component of the program is the requirement that students complete courses in another academic program where modeling and simulation is used as a support tool. In addition, course work in General Education skills and Ways of Knowing is required to assure a well-rounded program of study.

### Program Educational Objectives

The program educational objectives describe the expected accomplishments of graduates during the first few years after graduation. The educational objectives of the modeling and simulation engineering program, established with participation of all program constituencies, are consistent with the mission of Old Dominion University and the Department of Modeling, Simulation and Visualization Engineering.

The program educational objectives of the modeling and simulation engineering program are as follows.

Within a few years after graduation, modeling and simulation engineering alumni will have:

- Established themselves as practicing professionals in modeling and simulation engineering or related areas or have engaged in graduate study;
- Demonstrated their ability to work successfully as members of a professional team and to function effectively as responsible professionals; and,
- Demonstrated their ability to adapt to changing situations, evolving technologies, and new career challenges.

### Student Outcomes

The modeling and simulation engineering program utilizes an educational process to produce a set of outcomes that foster attainment of the program objectives and an assessment process that measures the degree to which the objectives and outcomes are achieved. The results of this assessment inform the continuous improvement of the program.

The modeling and simulation engineering program outcomes are as follows. Modeling and simulation engineering students who qualify for graduation have the following general education characteristics:

1. An ability to apply knowledge of mathematics, science, and engineering;
2. An ability to design and conduct experiments, as well as to analyze and interpret data;
3. An ability to 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;
4. An ability to function on multidisciplinary teams;
5. An ability to identify, formulate, and solve engineering problems;
6. An understanding of professional and ethical responsibilities;
7. An ability to communicate effectively;
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
9. A recognition of the need for, and an ability to engage in, life-long learning;
10. A knowledge of contemporary issues; and,
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

**In addition, students have the following characteristics specific to the modeling and simulation engineering discipline, which expand on the above engineering program outcomes:**

12. An ability to model a variety of systems from different domains;
13. An ability to communicate designs across technical and nontechnical boundaries;
14. An ability to develop an input data model based on observed data;

15. An ability to select and apply appropriate simulation techniques and tools;
16. An ability to develop simulations in software;
17. An ability to apply the experimental process to acquire desired simulation results;
18. An ability to apply visualization techniques to support the simulation process;
19. An ability to use appropriate techniques to verify and validate models and simulations; and
20. An ability to analyze simulation results to reach an appropriate conclusion.

### Modeling and Simulation Engineering Curriculum\*

#### Freshman

First Term	Hours	Second Term	Hours
MATH 211	4	MATH 212	4
ENGL 110C (grade of C or better required)	3	CHEM 123N**	3
CHEM 121N**	3	CS 150	4
CHEM 122N**	1	PHYS 231N	4
ENGN 110	2	MSIM 111	2
COMM 101R	3		
	<b>16</b>		<b>17</b>

#### Sophomore

First Term	Hours	Second Term	Hours
MSIM 201	3	MSIM 205	3
STAT 330	3	MSIM 281	1
PHYS 232N	4	MATH 307	3
CS 250	4	ENGL 231C (grade of C or better required)	3
CS 252	1	Human Creativity Literature	3
	<b>15</b>		<b>16</b>

#### Junior

First Term	Hours	Second Term	Hours
CS 330	3	MSIM 331	3
CS 381	3	MSIM 383	1
MSIM 320	3	Approved MSIM Technical Elective I	3
MSIM 382	1	MSIM 410	3
Human Behavior	3	MSIM 451	3
Approved Program Elective	3	Upper-Division General Education course/Option D Course I	3
	<b>16</b>		<b>16</b>

#### Senior

First Term	Hours	Second Term	Hours
MSIM 441	3	ENMA 480***	3

MSIM 487W (grade of C or better required)	4	MSIM 488	3
Upper-Division General Education course/Option D Course II	3	Approved Program Elective	3
ENMA 401	3	Interpreting the Past	3
Approved MSIM Technical Elective II	3	Impact of Technology ****	3
	<b>16</b>		<b>15</b>

Total credit hours: 127

- \* Does not include the University's General Education language and culture requirement. Additional hours may be required.
- \*\* Students in the Modeling and Simulation Engineering program may substitute BIOL 121N BIOL 122N and BIOL 123N BIOL 124N in place of the CHEM 121N, CHEM 122N, and CHEM 123N requirement.
- \*\*\* Meets philosophy and ethics general education requirement.
- \*\*\*\* Not necessarily met by the associate degree. Coursework may be taken either at Old Dominion University or the community college.

The General Education requirements in information literacy and research and philosophy and ethics are met through the major.

## Program Continuance Regulations

It is the policy of the Department of Modeling, Simulation and Visualization Engineering to deny a student eligibility to enroll in program courses after it becomes evident that the student is unable to maintain reasonable standards of academic achievement. This department continuance regulation is in addition to any University continuance regulations.

At the end of each semester, including summer sessions, the department reviews the records of all students. Depending on the number of credits attempted and the major grade point average earned, the following actions are taken prior to the beginning of the next term.

1. After six or more credits in the major have been attempted, if the major grade point average falls below 2.00 the student is placed on departmental academic probation.
2. A student who is on academic probation is subject to termination from the program under the following conditions:
  - a. if fewer than 35 credits in the major have been attempted and a deficiency of more than nine grade points below that required to maintain a 2.00 cumulative grade point average in the major exists; or
  - b. if 35 or more credits in the major have been attempted and a deficiency of more than six grade points below that required to maintain a 2.00 cumulative grade point average in the major exists.

Appeals of termination from the program are in order if extenuating circumstances warrant. Appeals are to be made in writing to the chair of the department. When submitted, an appeal is reviewed by the chair and a departmental faculty committee.

## Minor in Modeling and Simulation

The department offers a minor in modeling and simulation. For more information, see the section on minors in this catalog. /undergraduate/frankbattencollegeofengineeringandtechnology/minorsbattencollege/ (p. 228)

For further information contact the Department of Modeling, Simulation, and Visualization Engineering (p. 225).

# Naval Science (Naval Reserve Officers Training Corps)

Dan Cave, Department Chair

## Mission and Basic Program

The primary mission of the Department of Naval Science is to provide professional and leadership instruction to students who desire to serve as commissioned officers in the United States Navy or Marine Corps. The Naval ROTC program is administratively located under the Director of Military Activities and is situated, for academic matters, within the Batten College of Engineering and Technology. (<http://www.odu.edu/eng>)

The NROTC program consists of two courses of instruction: the four-year program and the two-year program. Both apply to scholarship and nonscholarship (college program) students.

The four-year program is divided into a two-year basic course and a two-year advanced course.

The basic course is normally pursued by NROTC midshipmen during their freshman and sophomore years. While most freshmen begin the basic course during the fall, it is possible to enter the program in the spring semester.

NAVS 101	Introduction to Naval Science	2
NAVS 201	Naval Ships Systems I	3
NAVS 202	Naval Ships Systems II	3
NAVS 320	Naval Sea Power	3
Accompanying naval laboratory sessions		

The advanced course is normally pursued during the junior and senior years.

NAVS 301	Navigation and Naval Operations I	3
NAVS 302	Navigation and Naval Operations II	3
NAVS 401	Leadership and Management I	3
NAVS 402	Leadership and Ethics	3
Accompanying laboratory sessions		

Students seeking a commission in the Marine Corps or Marine Corps Reserve are not required to take: NAVS 201, NAVS 202, NAVS 301, and NAVS 302 but instead must take NAVS 310 and NAVS 410.

Scholarship recipients supplement classroom instruction with an at-sea training period each summer. College program students supplement classroom instruction with at-sea training during the summer between their junior and senior years. Similarly, Marine Corps option students attend the six-week Marine Officer Candidate School at Quantico, Virginia during the summer between their junior and senior years.

The two-year NROTC program is extended to students who do not participate in NROTC during their freshman and sophomore years. Applications to join must be submitted during the sophomore year. For students entering this program, a six-week summer training period at the Naval Science Institute (NSI) in Newport, Rhode Island following their sophomore year replaces the basic course segment of the four-year program. Students successfully completing summer training enroll in the advanced course for their junior and senior years.

## Nuclear Power Option

To be most competitive, those students interested in entering the Navy's nuclear power program should have a college grade point average greater than 3.00. While any major is acceptable, all applicants must have completed at least two semesters of calculus (MATH 211 and MATH 212, or equivalent) and two semesters of calculus-based physics (PHYS 231N and PHYS 232N). Those students with a major in science, math, or engineering are most desirable. While not required, the following courses are recommended regardless of major for those students interested in navy nuclear power:

- Modern Physics
- Differential Equations
- Thermodynamics (ME)
- Principles of Chemistry
- Circuit Analysis.

## Minor in Military Leadership

A minor in military leadership is available. For further information, see the section on minors in the Batten College of Engineering and Technology. (<http://catalog.odu.edu/undergraduate/frankbattencollegeofengineeringandtechnology/minorsbattencollege/#minorinmilitaryleadership>)

For more information contact the Department of Naval Science at (757) 683-4741 or visit the web site: <http://www.odu.edu/nrotc>.

## Minors in the Batten College of Engineering and Technology

The upper-division General Education requirement can be met by selecting a minor.

### Minor in Aerospace Engineering

The Department of Mechanical and Aerospace Engineering offers a minor program comprising the following four courses:

MAE 403	Flight Mechanics	3
MAE 406	Flight Vehicle Aerodynamics	3
MAE 417	Propulsion Systems	3
MAE 420	Aerospace Structures	3
Total Hours		12

It may be possible to substitute other appropriate senior-level mechanical and aerospace engineering courses with prior approval of the Mechanical and Aerospace Engineering Department, such as MAE 460. All prerequisites and corequisites must be satisfied for all courses taken.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses, prerequisites and corequisites and complete at least six hours of upper-level courses in the minor requirement through courses offered by Old Dominion University.

### Interdisciplinary Minor – Biomedical Engineering

Christian Zemlin, Department of Electrical and Computer Engineering, Coordinator

This interdisciplinary minor is for students who would like to learn about processes encountered in biomedical engineering innovation and enhance their ability to integrate knowledge from different disciplines with principles used in biomedical engineering. The minor offers an opportunity for students to be recognized for study in this growing multidisciplinary field and to enhance competitiveness for job opportunities upon graduation.

Course requirements are as follows:

BME 401 & BME 402	Biomedical Engineering I: Principles and Biomedical Engineering II: Applications	6
Select two elective courses from the following:		6
BIOL 446	Comparative Biomechanics	
BIOL 460	Frontiers in Nanoscience and Nanotechnology	
BIOL 490	Advanced Human Physiology	
BIOL 496	Topics	
CHEM 443	Intermediate Biochemistry	

EXSC 322	Anatomical Kinesiology
EXSC 417W	Biomechanics
ECE 454	Introduction to Bioelectronics
ECE 462	Introduction to Medical Image Analysis (MIA)
MAE 303	Mechanics of Fluids
MAE 440	Introduction to Finite Element Analysis
MATH 316	Introductory Linear Algebra
MEDT 324	Clinical Instrumentation and Electronics
MGMT 325	Contemporary Organizations and Management
MSIM 451	Analysis for Modeling and Simulation
NMED 331	Fundamental Concepts in Nuclear Medicine Technology
NURS 458	Studies in Professional Nursing

Students have the option to substitute one course from those that satisfy their major requirements for one of the minor electives with approval of the minor coordinator.

Total Hours	12
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The interdisciplinary minor in biomedical engineering requires 12 credit hours of 300/400-level courses selected from at least two different disciplines with a maximum of six credits from any one discipline. For completion of the interdisciplinary minor, students must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses. At least six hours of upper-level courses must be taken through courses offered by Old Dominion University. Three credit hours may be in the major, if a major course is listed as an option for the interdisciplinary minor. As such, it will be credited toward both the major and the interdisciplinary minor.

### Minor in Civil Engineering

An undergraduate minor in civil engineering may be obtained by students from outside of the major by successful completion of 12 or more semester credit hours in approved civil engineering course work at the 300 or 400 level. In addition, a student seeking a minor in civil engineering must satisfy all pre- or corequisite requirements for the courses selected.

The course requirements are:

CEE 323	Soil Mechanics	3
or CEE 340	Hydraulics and Water Resources	
CEE 310	Structures I	3
CEE 470	Transportation Fundamentals	3
or CEE 4xx **		
CEE 4xx **		3
Total Hours		12

\*\* CEE 4xx can be any senior-level elective in coastal, geotechnical, structural or water resources engineering. The precise course of study must be approved by the chief departmental advisor.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses, prerequisites and corequisites and complete a minimum of six hours of upper-level courses in the minor requirement through courses offered by Old Dominion University. Completion of a minor in civil engineering with a grade point average of 3.00 or greater partially satisfies the leveling requirements for graduate degrees in civil engineering.

### Minor in Civil Engineering Technology – Construction

The minor in civil engineering technology – construction is open to all students (except civil engineering technology majors). The program consists of 12 credits and the specified courses are as follows:

CET 355	Sustainable Building Practices	3
CET 445	Construction Planning and Scheduling	3
CET 460	Construction Cost Estimating	3
CET 465	Construction Project Management	3
Total Hours		12

The courses are offered both on campus and through distance learning.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and complete at least six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Minor in Computer Engineering

An undergraduate minor in computer engineering may be obtained by successful completion of 12 or more semester credit hours of approved electrical or computer engineering or computer science course work at the 300 or 400 level. In addition, a student seeking a minor in computer engineering must satisfy all pre- or corequisite requirements for the courses selected. The chief departmental advisor must approve the precise course of study.

The basic course requirements are as follows:

CS 333	Programming and Problem Solving in C++	4
CS 250 and CS 252 may be substituted for CS 333.*		
CS 361	Advanced Data Structures and Algorithms	3
Select two of the following:		6
ECE 340	Digital Circuits (not available to ECE students)	
ECE 341	Digital System Design	
ECE 346	Microcontrollers	
ECE 355	Introduction to Networks and Data Communications	
ECE 381	Introduction to Discrete-time Signal Processing	
ECE 406	Introduction to Visualization	
ECE 441	Advanced Digital Design and Field Programmable Gate Arrays	
ECE 455	Network Engineering and Design	
ECE 483	Embedded Systems	
Total Hours		13

\* CS 150 is a prerequisite for CS 250 and CS 252 and is not included in the calculation of the GPA for the minor.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 for the courses required for the minor exclusive of lower-level courses, prerequisites and corequisites and complete a minimum of six hours of upper division courses in the minor through courses offered by Old Dominion University. Completion of a minor in computer engineering with a GPA of 3.00 or greater partially satisfies the leveling requirements for graduate degrees in computer engineering.

## Minor in Electrical Engineering

An undergraduate minor in electrical engineering may be obtained by successful completion of 12 or more semester credit hours of approved electrical engineering course work at the 300 level or above. In addition, a student seeking a minor in electrical engineering must satisfy all pre- or corequisite requirements for the courses selected. Tracks in systems science, physical electronics, digital design, and other options are available. The chief departmental advisor must approve the precise course of study. The basic course requirements for the three main tracks are as follows:

### Systems Science Track

ECE 371	Circuit Analysis	3
ECE 303	Introduction to Electrical Power	3
ECE 304	Probability, Statistics, and Reliability	3
Select one of the following:		3
ECE 451	Communication Systems	
ECE 455	Network Engineering and Design	
ECE 461	Automatic Control Systems	
Total Hours		12

### Physical Electronics Track

ECE 304	Probability, Statistics, and Reliability	3
ECE 323	Electromagnetics	3
ECE 332	Microelectronic Materials and Processes	3
Select one of the following:		3
ECE 472	Plasma Processing at the Nanoscale	
ECE 473	Solid State Electronics	
ECE 474	Optical Fiber Communication	
ECE 478	Introduction to Lasers and Laser Applications	
Total Hours		12

### Digital Design Track

ECE 304	Probability, Statistics, and Reliability	3
ECE 340	Digital Circuits	4
ECE 341	Digital System Design	3
Select one from the following:		3
ECE 443	Computer Architecture	
ECE 346	Microcontrollers	
Total Hours		13

The digital design track is not available for computer engineering majors.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses, prerequisites and corequisites and complete at least six hours of upper-level courses in the minor requirement through courses offered by Old Dominion University. Completion of a minor in electrical engineering with a GPA of 3.00 or greater partially satisfies the leveling requirements for graduate degrees in electrical engineering.

## Minor in Electrical Engineering Technology

The minor in electrical engineering technology is open to students (except electrical engineering technology majors) who have completed at least one three-credit course in calculus. It is particularly helpful for those who are preparing for the Fundamentals of Engineering examination. The courses are offered both on campus and through distance learning.

The program consists of 12 credits. The specified courses are as follows:

EET 350	Fundamentals of Electrical Technology	3
EET 360	Electrical Power and Machinery	3
EET 410	Communication Principles	3
EET 415	Programmable Machine Controls	3
Total Hours		12

Certain substitutions are possible if suitable justification is provided.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and complete at least six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Minor in Engineering Management

### Opportunities for Employment and Graduate Studies

According to a recent Income and Salary Survey by the National Society of Professional Engineers, the median annual income of engineers having executive/administrative job functions is approximately \$20,000 higher than those having technical functions. This program provides undergraduate students with a set of courses that provides some of the basic management concepts useful to those aspiring to an executive/administrative management position in technology-based, project-oriented organizations. Upon graduation, this knowledge will help individuals qualify for project management positions or for entrepreneurial activities. Students interested in obtaining a strong preparation in engineering management should consider this minor.

### Points of Interest

The minor in engineering management is intended for students with majors in engineering, engineering technology, computer science, physics, chemistry, mathematics, ocean, earth and atmospheric sciences, or biology. Students with majors in other disciplines may also pursue this minor, and they are encouraged to talk with their advisors to determine its appropriateness to their educational objectives. The minor develops the skills in team building, interpersonal communications, decision making, ethics and leadership, project management, risk analysis, and quality assurance that employers are increasingly looking for in both engineers and scientists, as well as in other employees in "high tech" organizations. The minor also satisfies the University's General Education upper-division requirement.

### Requirements

Applicants for the minor in engineering management must be juniors or seniors with a declared major and a minimum GPA of 2.00. The courses can also be taken by graduate students or other graduates. The minor requires completion of 12 credit hours of course work with a minimum grade point average of 2.00 in the courses required for the minor exclusive of lower-level courses and prerequisite courses. A minimum of six hours in upper-level courses in the minor requirement must be taken through courses offered by Old Dominion University.

### Curriculum

The course work for the minor in engineering management involves extensive writing assignments, oral presentations, and group projects, and is designed to develop the skills needed for rapid advancement in either industrial or government organizations. Twelve credit hours of course work is required to meet the requirements for the minor in engineering management. Any 300-400 level ENMA course is acceptable for the minor in engineering management. Students who intend to complete a master's in engineering management or in systems engineering should take ENMA 420 as part of their minor requirements as it is a prerequisite to both programs.

For additional information about the undergraduate minor in engineering management, contact:

Chair

Department of Engineering Management and Systems Engineering  
Old Dominion University  
Norfolk, VA 23529-0248

Telephone: (757) 683-4558

FAX: (757) 683-5640

## Minor in Environmental Engineering

An undergraduate minor in environmental engineering may be obtained by successful completion of 12 or more semester credit hours in approved environmental engineering course work at the 300 or 400 level. In addition, a student seeking a minor in environmental engineering must satisfy all pre- or corequisite requirements for the courses selected.

Two tracks are available: aqueous environmental systems and environmental protection. The course requirements are as follows:

### Aqueous Environmental Systems

CEE 350	Environmental Pollution and Control	3
Select three of the following:		9
CEE 440	Hydraulic Engineering	
CEE 446	Urban Stormwater Hydrology	
CEE 450	Water Distribution and Wastewater Collection System Design	
CEE 451	Water and Wastewater Treatment	
Total Hours		12

### Environmental Protection

CEE 350	Environmental Pollution and Control	3
Select three of the following:		9
CEE 451	Water and Wastewater Treatment	
CEE 452	Air Quality	
CEE 454	Hazardous Wastes	
CEE 458	Sustainable Development	
Total Hours		12

For completion of a minor a student must have a minimum overall cumulative grade point average of 2.00 in courses required for the minor exclusive of lower-level courses, prerequisites and corequisites and complete a minimum of six hours of upper-level courses in the minor requirement through courses offered by Old Dominion University. Completion of a minor in environmental engineering with a grade point average of 3.00 or greater partially satisfies the leveling requirements for graduate degrees in environmental engineering.

## Minor in Global Engineering

The minor in global engineering is for students who plan to seek career opportunities in companies with global operations. With globalization of design and manufacturing, it has become important for engineers, engaged in transnational projects, to not only have better teamwork and communication skills, but also a good understanding of the socioeconomic, environmental and cultural aspects of global engineering projects. The global engineering minor provides an understanding of these aspects through courses that develop an understanding of global technology, quality assurance standards, and differences in cultural, communication and business practices in a global work environment.

Students may obtain a minor in global engineering by successful completion of 12 semester credit hours in approved course work at the 300- or 400-level. In addition, a student seeking a minor in global engineering must satisfy all pre- or corequisite requirements for the courses selected. The requirements are as follows:

CEE 458	Sustainable Development	3
CEE 367	Cooperative Education *	3
or ECE 367	Cooperative Education	
or MAE 367	Cooperative Education	
Select two from the following:		6
GEOG 305	World Resources	
ENGL 371W	Communication Across Cultures	
MKTG 411	Multi-National Marketing	
Total Hours		12

\* Preferably at a multinational company.

For completion of a minor, a student must have a grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses, prerequisites and corequisites and complete at least six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Minor in Marine Engineering

The minor in marine engineering is open to all students with the exception of those students in the Mechanical Engineering Technology program's Marine Engineering option. Students seeking the minor must satisfy all pre- or corequisite requirements for the courses selected. The minor is multidisciplinary and consists of four courses in topics that are relevant to the shipbuilding, maintenance, repair and maritime operations industries.

The course requirements are as follows:

MET 475	Marine Engineering I	3
MET 476	Marine Engineering II	3
MAE 450	Principles of Naval Architecture	3
MAE 417	Propulsion Systems	3
Total Hours		12

For completion of a minor, a student must have a minimum overall grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses, prerequisites and corequisites and complete at least six hours of upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Minor in Mechanical Engineering

The Department of Mechanical and Aerospace Engineering offers a minor program with two emphases: thermal sciences and mechanics.

The specific minimum courses required are as follows:

### Thermal Sciences

MAE 303	Mechanics of Fluids	3
MAE 311	Thermodynamics I	3
MAE 312	Thermodynamics II	3
or MAE 414	Introduction to Gas Dynamics	
MAE 315	Heat and Mass Transfer	3
Total Hours		12

### Mechanics

MAE 332	Mechanical Engineering Design I	3
MAE 340	Computational Methods in Mechanical Engineering	3
MAE 404	Vibrations	3
MAE 436	Dynamic Systems and Control	3
Total Hours		12

It may be possible to substitute other appropriate junior- or senior-level mechanical engineering courses for those specified above with prior approval of the department. Exceptions are rare and are not encouraged. All prerequisites and corequisites must be satisfied for all courses taken.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses, prerequisites and corequisites and complete at least six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Minor in Mechanical Engineering Technology

The minor in mechanical engineering technology is open to students (except mechanical engineering and mechanical engineering technology majors) who have completed at least one three-credit course in calculus. It is particularly helpful for those who are preparing for the Fundamentals of Engineering examination. The courses are offered both on campus and through distance learning.

The program consists of 12 credits and the specified courses are as follows:

MET 300	Thermodynamics	3
MET 310	Dynamics	3

MET 330	Fluid Mechanics	3
MET 350	Thermal Applications	3
Total Hours		12

Certain substitutions are possible if suitable justification is provided.

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses, prerequisites and corequisites and complete at least six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Minor in Military Leadership

The minor in military leadership is a high quality, interdisciplinary, multidimensional, experiential, and culturally diverse program that exposes students to, and prepares them for, real life leadership opportunities and challenges. Students explore issues of leadership, citizenship, and social change within the context of an inquiry, experiential, and competency-based instructional design. The minor is open to all students who have completed the prerequisite courses. Students who are not enrolled in the military science or naval science program will receive academic credit for commissioning purposes.

The requirements for students in the Naval Science Department are completion of the following:

NAVS 302	Navigation and Naval Operations II	3
or NAVS 410	Amphibious Warfare	
NAVS 301	Navigation and Naval Operations I	3
or		
NAVS 310	Evolution of Warfare	
or NAVS 320	Naval Sea Power	
NAVS 401	Leadership and Management I	3
NAVS 402	Leadership and Ethics	3

Select one of the following:

ENMA 301	Introduction to Engineering Management	3
ENMA 401	Project Management	
ENGL 435W	Management Writing	
HIST 360	American Military History	
HIST 408	War and American Society in the Twentieth Century	
MGMT 325	Contemporary Organizations and Management	
MGMT 340	Human Resources Management	
NURS 480W	Leadership and Management	
PHIL 441	Foundations of Ethics	
PHIL 442E	Studies in Applied Ethics	
POLS 326W	American Foreign Policy	
POLS 327W	Politics of National Security	
POLS 350T	Technology and War	
POLS 421	International Law	
PSYC 343	Personnel Psychology	
PSYC 345	Organizational Psychology	
SOC 352	War and Peace	

Total Hours 15

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Minor in Modeling and Simulation

An undergraduate minor in modeling and simulation may be obtained by successful completion of 12 or more credit hours of approved modeling

and simulation engineering coursework at the 200-, 300-, and 400- level. In addition, a student seeking a minor in modeling and simulation must satisfy all pre- or corequisite requirements for the courses selected.

There are two tracks available in the minor in modeling and simulation: simulation application and simulation development. The chief departmental advisor for the Department of Modeling, Simulation and Visualization Engineering must approve the precise course of study in the minor.

The basic course requirements for the two tracks are as follows:

#### Simulation Application Track

STAT 330	An Introduction to Probability and Statistics (or equivalent)	3
MSIM 205	Discrete Event Simulation	3
MSIM 320	Continuous Simulation	3
and three hours selected from either		3
MSIM 410	Model Engineering	
MSIM 451	Analysis for Modeling and Simulation	
Total Hours		12

#### Simulation Development Track

STAT 330	An Introduction to Probability and Statistics (or equivalent)	3
MSIM 205	Discrete Event Simulation	3
MSIM 331	Simulation Software Design	3
and three hours selected from either		3
MSIM 408	Introduction to Game Development	
MSIM 441	Computer Graphics and Visualization	
Total Hours		12

When appropriate, other course work can be developed in consultation with the chief departmental advisor.

For completion of the minor, a student must pass each course required for the minor, achieve a cumulative grade point average of 2.00 for all courses required for the minor exclusive of lower-level courses, prerequisites and corequisites, complete a minimum of twelve credit hours of approved coursework for the minor, and complete at least six hours of upper-level courses in the minor requirement through courses offered by Old Dominion University. To enter the program, students must have completed calculus and one college-level computer-programming course (CS 150 or equivalent). For further information contact the Department of Modeling, Simulation, and Visualization Engineering (p. 225).

## Minor in Motorsports Engineering

The minor in motorsports engineering is open to all students. Students seeking the minor must satisfy all pre- or corequisite requirements for the courses selected.

The minor is multidisciplinary and consists of four courses in topics that are relevant to the motorsports and automotive industries. Each course is practice-oriented and consists of integrated lectures and laboratories.

The basic course requirements are as follows:

MAE 407	Ground Vehicle Aerodynamics	3
MAE 457	Motorsports Vehicle Dynamics	3
MAE 467	Racecar Performance	3
MET 480	High Performance Piston Engines	3
or MAE 477	High Performance Piston Engines	
Total Hours		12

For completion of a minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses, prerequisites and corequisites and complete at least six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.



# College of Health Sciences

<http://www.hs.odu.edu/>

Shelley C. Mishoe, Dean

Richardean Benjamin, Associate Dean

Deborah Blythe Bauman, Assistant Dean

Leanne White, College Advisor

Katherine L. Ferrara, Advisor

The mission of the College of Health Sciences is to provide leadership in healthcare by offering excellent educational experiences in a quality learning environment to facilitate the development of competent, caring health professionals, by generating knowledge through inquiry and discovery, and by engaging in lifelong learning, and professional and community service. The college vision is to be a nationally ranked and internationally recognized leader in advancing health care by educating competent health professionals, generating practically significant scientific knowledge and innovative technologies, fostering scholarly collaborations and promoting positive public health policies. The college values integrity, inclusiveness, excellence and partnership. The degree programs are competitive, fully accredited, and nationally recognized for quality graduates.

The college consists of the School of Community and Environmental Health, the Gene W. Hirschfeld School of Dental Hygiene, the School of Medical Diagnostic and Translational Sciences, the School of Nursing, and the School of Physical Therapy and Athletic Training. These schools offer a variety of baccalaureate, master's, and doctoral degrees, undergraduate, graduate, and non-degree certificate programs, accelerated and degree completion programs, minors, and professional continuing education programs. In addition, many of these programs are offered off-campus and in a variety of distance learning formats. See individual program information or the Graduate Catalog for details.

## Program Application, Acceptance, and Continuance

A separate application must be submitted to be considered for acceptance into the health science majors. Application information, qualifications, deadlines, and advisors are listed in the specific program sections of the catalog and on the web site.

**Acceptance to the University does not constitute or guarantee acceptance into a health science major.** Students are notified by the program director of their acceptance and any other program specific requirements such as physicals, immunizations, technical standards, etc.

Continuance in the health science majors requires strong academic achievement, including successful demonstration of knowledge and use of practical and critical thinking skills in laboratory and in clinical rotations. Criminal background checks may be required as specified in course syllabi. Any student deemed unacceptable for clinical rotation due to results from a criminal background check will not be allowed to complete the program of study.

## Advanced Placement

Advanced placement credit may be earned for courses offered by the College of Health Sciences upon validation of mastery of the subject matter and skills covered in the respective course(s). A fee may be charged for the assessment of competency. Please check with the school offering the course for further information.

## Continuing Education Programs

<http://www.odu.edu/dental/cont-ed>

Short courses, national conferences, workshops, refresher courses, certificate programs and seminars are offered by the different schools in the college on and off campus on a noncredit continuing education (CEU) basis. Professional continuing education programs cover a wide range of topics, including environmental health, occupational safety, industrial hygiene, dental hygiene, dental assisting, nursing, nuclear medicine technology,

health-care management, medical technology, physical therapy, and community health.

Continuing education serves the following functions:

1. Licensure and certification for professionals and practitioners,
2. Credential and degree achievement and
3. Professional development to update knowledge and skills.

Clientele served by the programs include nursing, public health and allied health professionals, human service workers, managers and supervisory personnel, technicians, laboratory personnel, and health educators.

## Community and Environmental Health

[www.hs.odu.edu/commhealth/](http://www.hs.odu.edu/commhealth/)

Deanne Shuman, Interim Chair

The School of Community and Environmental Health offers undergraduate, graduate, and certificate programs that lead to careers in health services research, public health, community health, health care administration, environmental health, and occupational safety and health. Additionally, the Bachelor of Science in Health Sciences (B.S.H.S.) and the Master of Public Health offer practicing health care professionals the opportunity to complete their degrees in a distance format.

## Bachelor of Science in Environmental Health

[www.hs.odu.edu/commhealth/academics/bs\\_enviro/](http://www.hs.odu.edu/commhealth/academics/bs_enviro/)

A. James English, Program Director

Environmental health is the study and management of factors that adversely affect the environment and the health and well-being of humans. The curriculum in environmental health, which is accredited by the National Environmental Health Science and Protection Accreditation Council, encompasses a variety of disciplines in the preparation of environmental health specialists, industrial hygienists, and occupational safety specialists.

Environmental health specialists are responsible for education, consultation, and enforcement relating to local, state and federal laws, regulations, and standards governing the safety and sanitation of air, water, milk, food, solid, hazardous and infectious wastes, sewage, housing, institutional environments, and other health hazards. They are actively involved in the overall environmental quality within a community and prevention of diseases associated with environmental factors. Industrial hygienists conduct health hazard evaluations, perform health effects/risk assessment research, and manage health programs in industries or governmental organizations. They anticipate, recognize, evaluate, control, and eliminate health hazards in industry, the community, or the environment. Occupational safety professionals similarly anticipate, identify and evaluate hazardous conditions and practices in the workplace. They develop, implement, administer, measure and evaluate the effectiveness of hazard control programs.

The program requires six credit hours of field practice or internship within an environmental health setting, either a governmental or industrial site. A variety of internship sites are available in the Hampton Roads area for these experiences. Internship sites elsewhere in the state, nation, or world can also be arranged if desired. Internships are typically taken the summer between the junior and senior year. Students are responsible for providing their own transportation to these sites.

Upon graduation, students are eligible to sit for the professional licensing examination in environmental health. With experience, students are eligible to take the certification examination in industrial hygiene and/or occupational safety.

A broad spectrum of employment opportunities is available to graduates whose employment success has been outstanding. Graduates have found positions in local, state, and federal health and environmental agencies such as the FDA, USDA, EPA, OSHA, NASA, and DOD. Many work in

hospitals, industries, insurance companies, laboratories, consulting firms, waste and wastewater plants, and other organizations, agencies and firms.

## Admission

Students may be admitted to the program on the satisfactory completion of 60 semester hours of recommended study of required prerequisite courses and with the approval of the program director. Applications to the program, including all materials, must be submitted no later than February 1 for consideration for admission the following fall. Exemptions may be appealed through the program director. Students who fail to meet the established deadline for formal admission will usually be allowed to take environmental health courses if space is available; however, permission must be granted by the program director prior to registration.

## Requirements

### Lower-Division General Education

Written Communication		
ENGL 110C	English Composition (grade of C or better required)	3
ENGL 231C	Introduction to Technical Writing (grade of C or better required) *	3
Oral Communication		
COMM 101R	Public Speaking *	3
Mathematics		
STAT 130M	Elementary Statistics *	3
MATH 162M	Precalculus I *	3
Language and Culture		0-6
Information Literacy and Research **		3
Human Creativity		3
Interpreting the Past		3
Literature		3
Philosophy and Ethics ***		3
The Nature of Science		12

Select one of the following sequences:

BIOL 110N & BIOL 111N	Environmental Sciences and Environmental Sciences Lab	
and		
BIOL 117N & BIOL 118N	Introduction to Human Biology and Introduction to Human Biology Lab	
BIOL 121N & BIOL 122N	General Biology I and General Biology I Lab	
and		
BIOL 123N & BIOL 124N	General Biology II and General Biology II Lab	

Select one of the following:

PHYS 101N	Conceptual Physics *	
PHYS 102N	Conceptual Physics *	
PHYS 111N	Introductory General Physics *	
PHYS 112N	Introductory General Physics *	
PHYS 231N	University Physics *	
PHYS 232N	University Physics *	
Human Behavior		3
Impact of Technology (upper-division T course outside the College of Health Sciences)		3
Departmental Requirements		
BIOL 103	Basic Bacteriology *	4
CHEM 211 & CHEM 212	Organic Chemistry Lecture and Organic Chemistry Laboratory *	5
CHEM 213	Organic Chemistry Lecture *	3

Select one of the following: 4

BIOL 250	Human Anatomy and Physiology I *	
BIOL 251	Human Anatomy and Physiology II *	
Major Requirements		43
ENVH 301W	Environmental Health ****	
ENVH 401	Occupational Health	
ENVH 402W	Environmental Health Administration and Law ****	
ENVH 403	Environmental Health Internship I	
ENVH 404 or ENVH 405	Environmental Health Internship II Environmental Health Internship III	
ENVH 406	Principles of Occupational Safety and Health	
ENVH 420	Communicable Diseases and Their Control	
ENVH 422	Water and Wastewater Technology	
ENVH 441	Industrial Hygiene	
ENVH 443	Principles of Toxicology	
ENVH 448	Epidemiology and Biostatistics	
ENVH 466	Environmental Risk Assessment and Decision Analysis	
ENVH 499	Environmental Health Senior Seminar	
ENVH Electives *****		13
Total Hours		120-126

\* Must be completed prior to acceptance into the Environmental Health program.

\*\* HLTH 120G preferred.

\*\*\* PHIL 345E preferred.

\*\*\*\* Grade of C or better required in one of the writing intensive courses

\*\*\*\*\* Consult with advisor for areas of specialization.

## Upper Division General Education

- Option A. Approved Disciplinary Minor, 12-24 hours minimum; also second degree or second major.
- Option B. Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Health Sciences and not required by the major (6 hours)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, minimum 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Minor in Environmental Health

A minor in environmental health requires a minimum of 12 semester hours of environmental health courses. Minor course requirements include ENVH 301W and three electives from the environmental health courses approved by the program director. For completion of the minor, students must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University. Twelve semester hours of science courses are preferred.

## Interdisciplinary Minor-Environmental Issues and Management

James English, Coordinator

Continuing environmental degradation is a worldwide problem threatening the quality of life and its viability. The problem can only be understood and addressed by drawing upon the resources of multidisciplinary approaches. The multidisciplinary perspective center of this minor focuses on the human dimensions of the human-environment equation and includes geographical and ecological approaches, scientific and technological methodologies, planning and public policy issues, and ethical, political, economic, and legal considerations.

Course options are as follows:

CEE 350	Environmental Pollution and Control	3
CEE 458	Sustainable Development	3
ECON 435	Health Economics: A Global Perspective	3
ECON 447W	Natural Resource and Environmental Economics	3
ENVH 301W	Environmental Health	3
ENVH 402W	Environmental Health Administration and Law	3
ENVH 420	Communicable Diseases and Their Control	3
ENVH 421	Food Safety	3
ENVH 422	Water and Wastewater Technology	3
GEOG 305	World Resources	3
GEOG 306T	Hazards: Natural and Technological	3
GEOG 400W	Seminar in Geography	3
GEOG 420	Marine Geography	3
GEOG 422W	Coastal Geography	3
OEAS 302	Environmental Geology	3
OEAS 310	Global Earth Systems	3
PAS 300	Foundations of Public Service	3
PHIL 344E	Environmental Ethics	3
PHIL 345E	Bioethics	3
POLS 300	Introduction to Public Policy	3
POLS 335	Environmental Politics	3
POLS 401	Global Environmental Policy	3
PRTS 405	Outdoor Recreation	3
SOC 309	Population and Society	3
SOC 320	Social Inequality	3
SOC 325	Social Welfare	3
SOC 440	Health, Illness, and Society	3
SOC/CRJS 444	Community Justice	3

The interdisciplinary minor in environmental issues and management requires 12 credit hours of 300/400-level courses selected from at least two different disciplines with a maximum of six credits from any one discipline. For completion of the interdisciplinary minor, students must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of lower-level courses and prerequisite courses. At least six hours of upper-level courses must be taken through courses offered by Old Dominion University. Three credit hours may be in the major, if a major course is listed as an option for the interdisciplinary minor. As such, it will be credited toward both the major and the interdisciplinary minor.

## Accelerated Program-Bachelor of Science in Environmental Health (B.S.E.H.) to Master of Public Health

B.S.E.H. students who have a 3.00 GPA and have senior standing may apply for acceptance into the B.S.E.H. to Master of Public Health accelerated program. This program allows gifted undergraduate B.S.E.H. students the opportunity to take up to 12 semester hours of graduate course work and apply them to both degrees. Other restrictions apply. Consult with the B.S.E.H. program director for more information.

## Minor in Occupational Safety

A minor in occupational safety is available in the environmental health program and requires a minimum of 12 semester hours of ENVH courses in safety. The minor in occupational safety is designed to prepare students to meet safety standards and guidelines in such areas as business, education and industry with the goal of managing operations to minimize financial losses resulting from accidents, health claims, legal actions and property damage. It is especially attractive to students in majors such as engineering, occupational and technical studies, and business who may reasonably anticipate assignment of safety as an additional duty.

Minor course requirements include:

ENVH 406	Principles of Occupational Safety and Health	3
ENVH 407	Occupational Safety Standards, Laws and Regulations	3
ENVH 425	Occupational Safety and Health Program Management	3
ENVH 426	Physical Hazards and Their Control	3
Total Hours		12

For completion of the minor students must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Certificate in Occupational Safety

The certificate program in occupational safety is designed to prepare students to meet safety standards and guidelines in such areas as business, education and industry with the goal of managing operations to minimize financial losses resulting from accidents, health claims, legal actions and property damage. It is especially attractive to students in majors such as engineering, occupational and technical studies, and business who may reasonably anticipate assignment of safety as an additional duty, or to individuals already employed in the environmental health and safety field. Courses taken in the certificate program may be applied to degree requirements at both the undergraduate and graduate levels in environmental health. For completion of the undergraduate certificate program students must have a minimum cumulative grade point average of 2.00 (3.00 for the graduate certificate) in all courses taken toward the certificate. After successful completion of the program, a Certificate in Occupational Safety will be awarded.

A total of 15-16 semester hours is required comprised of three core courses and six to seven hours of electives. Core courses include:

ENVH 406/506	Principles of Occupational Safety and Health	3
ENVH 407/507	Occupational Safety Standards, Laws and Regulations	3
ENVH 425/525	Occupational Safety and Health Program Management	3

Electives may be selected from the following: 6-7

ENVH 401/501	Occupational Health	
ENVH 426/526	Physical Hazards and Their Control	
ENVH 440/540	Principles of Ergonomics	
ENVH 441/541	Industrial Hygiene	
ENVH 442/542	Sampling and Analysis Laboratory	
ENVH 446/546	Physical Hazards Laboratory	
NMED 335	Radiation Health	
Total Hours		15-16

There are no prerequisites.

# Bachelor of Science in Health Sciences (B.S.H.S.)

[www.hs.odu.edu/commhealth/academics/bshs](http://www.hs.odu.edu/commhealth/academics/bshs)

Jacqueline E. Sharpe, Program Director

The Bachelor of Science in Health Sciences (B.S.H.S.) degree enables those new to health services administration to have the knowledge and ability to function in inpatient hospitals, ambulatory clinics/services, wellness/fitness centers, physician practices, skilled nursing centers/homes, retirement communities, assisted living facilities, home health agencies, and public health departments/community health centers.

The B.S.H.S. program is also designed to offer advanced educational experiences to already practicing health professionals. This program builds upon the expertise of practicing health professionals and allows them the opportunity to enhance their formal learning. The program focuses on upper-level coursework and general education, along with a career choice chosen by the student. Areas of concentration within the program are health services administration, human services minor, or public health.

## Admission

To be eligible for admission into the program, the student must first be admitted to Old Dominion University, prior to completing an application to the B.S.H.S. program. Admission into ODU does not guarantee admission into the B.S.H.S. program. Eligibility must be documented with a separate admission form to the B.S.H.S. program director. Lower-division general education requirements for both the concentration in health services administration and the minor in human services may also be satisfied by prior coursework completed as part of an associate degree or by an articulation agreement. Students must complete ENGL 110C with a grade of C or better before declaring the major. In addition, students who do not have licensure, an A.A.S. degree or certification must complete the following prerequisite courses before declaring the major: CHP 200, CHP 328, CHP 335, and CHP 390.

## Lower-Division General Education

Written Communication (grade of C or better required in both courses)	6
Oral Communication *	0-3
Mathematics **	3-6
Language and Culture	0-6
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics ***	0-3
The Nature of Science ****	8
Human Behavior *****	3
Impact of Technology *****	0-3
<b>Total Hours</b>	<b>32-50</b>

\* Can be satisfied in the major with CHP 400, CHP 450, and CHP 415W or CHP 430W.

\*\* Both STAT 130M and MATH 162M are required for the public health concentration. STAT 130M is recommended for students in the health services administration concentration and the human services minor.

\*\*\* Can be satisfied in the major with CHP 400.

\*\*\*\* BIOL 105N - BIOL 106N or BIOL 110N/BIOL 111N - BIOL 117N/BIOL 118N or BIOL 121N/BIOL 122N - BIOL 123N/BIOL 124N required for public health concentration.

\*\*\*\*\* ECON 202S required for students without licensure, A.A.S. degree or certification

\*\*\*\*\* Can be satisfied in the major with CHP 485.

# B.S.H.S Professional Electives for both the Health Services Administration Concentration and the Human Services Minor

## Students with Licensure, A.A.S. Degree and/or Certification

Current licensure as a health professional, an Associate of Applied Science degree, and/or certification will be used toward satisfying the professional elective requirements. A minimum of 15 professional elective credits will be awarded. Certification refers to the passing of an exam upon completion of an educational program to demonstrate competency in a chosen profession. The following programs are some that have been accepted: Radiation Technology, Nursing, Occupational Therapy Assistant, Dental Hygiene, Emergency Medical Technology, Respiratory Therapy, and Physical Therapy Assistant. Consult the program director for specific information as additional programs may be considered.

## Students without Licensure, A.A.S. Degree or Certification

Students who do not have a current license as a health professional, an Associate of Applied Science degree, or a certification must complete the following prerequisite courses and departmental requirements (34-36 credits).

## Prerequisite Courses

Course List		
CHP 200	Principles of Public Health	3
CHP 328	Public Health Science	3
CHP 335	Population Health	3
CHP 390	The U.S. Healthcare Delivery System	3
<b>Total Hours</b>		<b>12</b>

## Departmental Requirements

CHP 368	Internship	1-3
CHP 415W	Critical Issues in Public/Community Health Administration *	3
or		
CHP 430W	Community Health Resources and Health Promotion *	
CHP 440	Finance and Budgeting in Healthcare	3
CHP 445	Health Services Research **	3
CHP 450	Public and Community Health Administration	3
CHP 461	Managerial Epidemiology **	3
CHP 480	Health Ethics and the Law	3
ECON 435	Health Economics: A Global Perspective ***	3
<b>Total Hours</b>		<b>22-24</b>

\* C or better required

\*\* Prerequisite: STAT 130M

\*\*\* Prerequisite: ECON 202S

## B.S.H.S. Major Electives for Both the Health Services Administration Concentration and the Human Services Minor

Students with licensure, an A.A.S. degree or certification must complete CHP 368, at least one of the writing intensive courses (CHP 415W, CHP 430W) with a grade of C or better, and three additional three-credit CHP courses or related courses with permission of the program director. Students without licensure, an A.A.S. degree or certification must select five CHP courses or related courses in addition to the courses selected to meet departmental requirements.

Examples of courses to select from are as follows:

## Course List

Select five of the following: 13-15

CHP 368	Internship *	
CHP 360	Introduction to Global Health	
CHP 400	Ethics in Health Administration	
CHP 415W	Critical Issues in Public/Community Health Administration **	
CHP 426 & CHP 427	Skills in Health Services Administration I and Skills in Health Services Administration II	
CHP 430W	Community Health Resources and Health Promotion **	
CHP 445	Health Services Research	
CHP 450	Public and Community Health Administration	
CHP 465	Policy and Politics of Health	
CHP 475	Healthcare Marketing	
CHP 480	Health Ethics and the Law	
CHP 485	Health Informatics	
ENVH 301W/401	Environmental Health	
DNTH 415	Research Methods in the Health Sciences	
MEDT 403W	Management in the Clinical Setting	
NMED 300	Medical Terminology	
Any other CHP course by permission		
Total Hours		13-15

\* CHP 368 is required for students with licensure, an A.A.S. degree or certification. Students without licensure, an A.A.S. degree or certification must complete the internship course as part of the departmental requirements.

\*\* CHP 415W or CHP 430W is required and must be completed with a grade of C or better.

### Bachelor of Science in Health Sciences with a Concentration in Health Services Administration

The curriculum consists of lower-division general education, major electives, professional electives, and upper-division general education courses. A minimum of 120 credits is required for the B.S.H.S. with a concentration in health services administration, at least 30 of which, including 12 upper level in the major, must be taken in the B.S.H.S. program at Old Dominion University. Requirements include courses in the following areas: community and public health, research methods, and health services administration and management.

#### Health Services Administration Concentration Electives

MGMT 325	Contemporary Organizations and Management	3
Select four MGMT 300-400 electives from the following:		12
MGMT 340	Human Resources Management	
MGMT 350	Employee Relations Problems and Practices	
MGMT 360	Labor Management Relations	
MGMT 417	Employment Law	
MGMT 418	Advanced Human Resources Management: Contemporary Issues	
MGMT 451	Organizational Behavior	
MGMT 452	Organization Development	
MGMT 462	Comparative International Management	
Total Hours		15

### Bachelor of Science in Health Sciences with a Human Services Minor

The curriculum consists of lower-division general education, major electives, professional electives, and upper-division general education

courses. A minimum of 120 credits is required for the B.S.H.S. with a human services minor, at least 30 of which, including 12 upper level in the major, must be taken in the B.S.H.S. program at Old Dominion University. Requirements include courses in the following areas: community and public health, research methods, human services and counseling.

#### Human Services Minor

HMSV 339	Interpersonal Relations	3
HMSV 341	Introduction to Human Services	3
HMSV 343W	Human Services Methods	3
HMSV 346	Diversity Issues in Human Services	3
Select one course from the following:		3
HMSV 344	Career Development and Appraisal	
HMSV 447	Addictions: Theory and Intervention	
HMSV 448	Interventions and Advocacy with Children	
HMSV 449	Theory and Practice of Prevention in Human Services	
HMSV 491	Family Guidance	
Total Hours		15

#### Upper Division General Education

Upper-division general education requirements for both tracks are satisfied through program-required courses in either the concentration in health services administration or the minor in human services.

### Bachelor of Science in Health Sciences with a Concentration in Public Health

According to the American Public Health Association (APHA), "Public health protects individuals, families and communities from serious health threats—ranging from diabetes to bird flu—that are often times preventable." The public health profession provides essential services that allow successful tracking of the spread of chronic and communicable diseases, provide needed community health education, and detect health problems in newborns. Public health professionals strive to improve society's quality of life. Public health officials have many responsibilities and work to increase access to healthcare, reduce substance abuse and control infectious diseases in human populations. A public health undergraduate degree is preferred to begin a career as a public health professional. Earning a public health undergraduate degree qualifies an individual for entry-level positions in fields such as health services administration, epidemiology and health education.

The purpose of the track in public health is to provide students the necessary skills to enter the public health profession. Public health is a rapidly expanding profession and is critical to the current workforce shortage and vital to global health.

Lower-division General Education requirements are as described in the B.S.H.S. program earlier in this section. The following are department requirements and are not automatically satisfied with an associate degree: BIOL 105N - BIOL 106N or BIOL 110N/BIOL 111N - BIOL 117N/BIOL 118N or BIOL 121N/BIOL 122N - BIOL 123N/BIOL 124N, MATH 162M, and STAT 130M.

Students must choose one of the following emphasis areas and complete 36 credit hours. Students must complete 18 hours from either area and then apply and be accepted to the program to be allowed to continue with the public health concentration.

#### Scientific Foundations Emphasis: (36 credit hours selected from the courses listed below)

Course List		
BIOL 250	Human Anatomy and Physiology I	4
BIOL 251	Human Anatomy and Physiology II	4
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	4

CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	4
CHEM 211 & CHEM 212	Organic Chemistry Lecture and Organic Chemistry Laboratory	5
CHEM 213 & CHEM 214	Organic Chemistry Lecture and Organic Chemistry Laboratory	5
PHYS 111N or PHYS 101N	Introductory General Physics Conceptual Physics	4
PHYS 112N or PHYS 102N	Introductory General Physics Conceptual Physics	4
MATH 163	Precalculus II	3
MATH 211 & MATH 212 or MATH 200	Calculus I and Calculus II Calculus for Business and Economics	3-8
MEDT 307 & MEDT 308	Clinical Methods in Microbiology and Clinical Microbiology	5
CYTO 404	General Pathology	3
CYTO 407	Clinical Histology	3
MEDT 310 & MEDT 313	Urinalysis and Body Fluids and Diagnostic Methods in Urinalysis	2
MEDT 339 & MEDT 340	Medical Parasitology and Mycology Laboratory and Medical Parasitology, Mycology, and Virology	2
PSYC 201S or SOC 201S	Introduction to Psychology Introduction to Sociology	3

**Administration Emphasis: (36 credit hours selected from the courses listed below)**

ECON 201S	Principles of Macroeconomics	3
ECON 202S	Principles of Microeconomics	3
MATH 200	Calculus for Business and Economics	3
ACCT 201	Principles of Financial Accounting	3
ACCT 202	Principles of Managerial Accounting	3
FIN 331	Legal Environment of Business	3
IT 325	Web Site and Web Page Design	3
IT 360T	Principles of Information Technology	3
MATH 163	Precalculus II	3
MKTG 311	Marketing Principles and Problems	3
MGMT 325	Contemporary Organizations and Management	3
MGMT 340	Human Resources Management	3
MGMT 350	Employee Relations Problems and Practices	3
Select one of the following:		3-8
BIOL 103	Basic Bacteriology	
BIOL 250 & BIOL 251	Human Anatomy and Physiology I and Human Anatomy and Physiology II	
CHEM 105N & CHEM 106N	Introductory Chemistry and Introductory Chemistry Laboratory	4
CHEM 107N & CHEM 108N	Introductory Organic and Biochemistry and Introductory Organic and Biochemistry Laboratory	4
CYTO 404	General Pathology	3
PSYC 201S or SOC 201S	Introduction to Psychology Introduction to Sociology	3

**Public Health Major Courses (Prerequisite or corequisite is CHP 200 and 18 hours from the courses below):**

Course List		
CHP 200	Principles of Public Health	3
CHP 360	Introduction to Global Health	3

CHP 368	Internship	1-3
CHP 450	Public and Community Health Administration	3
CHP 465	Policy and Politics of Health	3
DNTH 415	Research Methods in the Health Sciences *	3
ENVH 301W	Environmental Health	3
ENVH 448	Epidemiology and Biostatistics	3

\* Prerequisite STAT 130M.

**Choose two major electives from below:**

CHP 318	Principles of Nutrition	3
CHP 400	Ethics in Health Administration	3
CHP 415W	Critical Issues in Public/Community Health Administration	3
CHP 420	Foundations of Gerontology	3
CHP 430W	Community Health Resources and Health Promotion	3
CHP 480	Health Ethics and the Law	3
NMED 300	Medical Terminology	3
ENVH 420	Communicable Diseases and Their Control	3

**Upper Division General Education**

- Option A. Approved Disciplinary Minor, 12 hours minimum; also second degree or second major.
- Option B. Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Health Sciences and not required by the major (6 hours)

**Electives: Elective credit will be needed to total 120 hours.**

**Graduation Requirements for all tracks**

- Completion of a minimum of 120 semester credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University.
- Completion of ENGL 110C, ENGL 211C or 221C or 231C and the writing intensive (W) course in the major with a grade of C or better.
- Completion of Senior Assessment (during last semester)
- Minimum grade point average of 2.0 overall and in the major

**Accelerated Program—Bachelor of Science in Health Sciences (B.S.H.S.) to Master of Public Health**

B.S.H.S. students who have a 3.00 GPA from each institution attended and who have senior standing may apply for acceptance into the B.S.H.S. to M.P.H. (Master of Public Health) accelerated program. This program allows gifted undergraduate B.S.H.S. students the opportunity to take up to 12 semester hours of graduate course work and apply them to both degrees. Other restrictions apply. Consult with the B.S.H.S. program director for more information.

**Minor in Community Health**

An undergraduate minor in community health can be obtained by the completion of 12 credit hours from the following courses:

CHP 318	Principles of Nutrition	3
CHP 360	Introduction to Global Health	3
CHP 400	Ethics in Health Administration	3
CHP 415W	Critical Issues in Public/Community Health Administration	3

CHP 420	Foundations of Gerontology	3
CHP 425	Health Aspects of Aging	3
CHP 426	Skills in Health Services Administration I	1-3
CHP 427	Skills in Health Services Administration II	1-3
CHP 430W	Community Health Resources and Health Promotion	3
CHP 440	Finance and Budgeting in Healthcare	3
CHP 445	Health Services Research	3
CHP 450	Public and Community Health Administration	3
CHP 455	Interpersonal and Counseling Skills for Health Professionals	3
CHP 456	Substance Use and Abuse	3
CHP 465	Policy and Politics of Health	3
CHP 470	Death, Dying and Survivorship	3
CHP 475	Healthcare Marketing	3
CHP 480	Health Ethics and the Law	3
CHP 485	Health Informatics	3
One of the following may be substituted for one CHP course:		3
DNTH 415	Research Methods in the Health Sciences	
ENVH 301W	Environmental Health	
ENVH 401	Occupational Health	
MEDT 403W	Management in the Clinical Setting	
NMED 300	Medical Terminology	

For completion of the minor, a student must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of prerequisite courses and complete a minimum of six hours in upper-level courses in the minor requirement through courses offered by Old Dominion University.

## Bachelor of Science in Health Sciences (B.S.H.S.) Specialty Concentrations

Through special agreements and curriculum design, courses for the certificate program in cytotechnology, offered by the School of Medical Diagnostic and Translational Sciences, may be applied as a specialty concentration in the Bachelor of Science in Health Sciences. The concentration can be found in the School of Medical Diagnostic and Translational Sciences section of this Catalog. Students pursuing cytotechnology who already have baccalaureate degrees from accredited institutions may opt for a certificate in this program rather than a second baccalaureate degree.

### Cytotechnology Concentration in the B.S.H.S.

Sophie K. Thompson, Program Director

This concentration is available to students who complete the requirements for the B.S.H.S. degree. Specific information on the cytotechnology program can be found in the School of Medical Diagnostic and Translational Sciences section of this Catalog.

### Ophthalmic Technology Concentration in the B.S.H.S.

Lori J. Williams Program Director

Specific information on the ophthalmic technology program can be found in the School of Medical Diagnostic and Translational Sciences section of this Catalog.

## Dental Hygiene

[www.hs.odu.edu/dental](http://www.hs.odu.edu/dental)  
Susan Daniel, Chair

The Gene W. Hirschfeld School of Dental Hygiene offers programs leading to the degrees of Bachelor of Science in Dental Hygiene (entry level and degree completion) and Master of Science with a major in dental hygiene. The entry-level dental hygiene program is accredited by the Commission on Dental Accreditation.

## Bachelor of Science in Dental Hygiene

The baccalaureate program in dental hygiene is designed to prepare men and women as professional dental hygienists qualified for positions in a variety of health-care settings and/or for graduate study in dental hygiene. A dental hygienist is a licensed professional and member of the oral health care team who provides services to promote optimal oral health. Dental hygienists serve as clinical practitioners, educators, researchers, administrators, managers, program developers, consultants, and/or dental product sales representatives, depending on the individual's employment setting and educational background. In addition, dental hygienists with a bachelor's degree may pursue careers in elementary and secondary schools, community and public health settings, institutional and industrial dental hygiene, professional education, and research. Other career opportunities exist in health maintenance organizations, community health agencies, private industry, and abroad with the Peace Corps, World Health Organization, and foreign governments.

Students successfully completing the Bachelor of Science in Dental Hygiene program (entry level) are eligible to take the national, state, and regional board examinations in dental hygiene to become a licensed dental hygienist.

The baccalaureate degree completion curriculum is designed for the licensed dental hygienist who graduated from an accredited dental hygiene program with an associate degree or certificate in dental hygiene.

The School of Dental Hygiene reserves the right to require remedial work of any student who does not perform at a level satisfactory for patient care. Annually, students are required to submit documentation of CPR certification and certain prescribed immunizations and diagnostic procedures. Students are strongly advised to obtain the hepatitis vaccine. The University maintains liability insurance on the students while enrolled in the School of Dental Hygiene.

## Admission to Bachelor of Science in Dental Hygiene (Entry Level)

Applicants for admission to the baccalaureate program in dental hygiene should apply initially to the Office of Admissions of Old Dominion University. Students cannot be accepted into the dental hygiene program without first being admitted to the University. Admission to the University does not constitute admission to the dental hygiene program.

Students are admitted to the school after completion of lower-level General Education courses and department prerequisite courses. Transfer students may complete prerequisite courses at another college or university but are responsible for having a transfer credit evaluation completed by Transfer Evaluation Services to be used as documentation that transfer courses are acceptable. Applicants for admission to the School of Dental Hygiene should indicate on the application to the University their intention to enter the dental hygiene program. Additionally, applicants should obtain a School of Dental Hygiene application from the web site.

Admission to the program is competitive. Admission decisions are determined by the selection committee of the School of Dental Hygiene on the basis of academic qualifications. Basic requirements and credentials for the Bachelor of Science program application are as follows.

1. Submission of the University application, official high school and college transcripts, and required credentials to the Office of Admissions.
2. Completion of prerequisite courses prior to starting in the dental hygiene major, which are required by the Commission on Dental Accreditation and must be completed with at least a grade of C. Completion of lower-level General Education requirements will make the applicant more competitive in the application process.

BIOL 103	Basic Bacteriology	4
BIOL 250 & BIOL 251	Human Anatomy and Physiology I and Human Anatomy and Physiology II (or equivalent)	8
CHEM 105N	Introductory Chemistry	3
CHEM 106N	Introductory Chemistry Laboratory	1
CHEM 107N	Introductory Organic and Biochemistry	3
CHEM 108N	Introductory Organic and Biochemistry Laboratory	1
ENGL 110C	English Composition	3
SOC 201S	Introduction to Sociology	3
PSYC 201S	Introduction to Psychology	3

- A minimum grade point average of 3.00 makes the applicant most competitive.
- Applicants must complete at least 12 hours of documented observation in a dental facility to familiarize themselves with oral health delivery.
- Submission of School of Dental Hygiene application, official high school and college transcripts, two professional letters of recommendation forms, dental experience background information, and dental facility observation verification form by February 1. Incomplete application packets will not be reviewed and will be returned to the applicant. Application packet at: <http://hs.odu.edu/dental/academics/bs/about.shtml>

Applicants accepted into the dental hygiene program will be formally notified in April or sooner by the chair of the School of Dental Hygiene and will be advised for registration purposes by the chief departmental advisor. Those applicants who are not accepted will receive notice and should pursue general academic and science courses prior to reconsideration for admission. Qualified high school seniors may apply for admission to the University with guaranteed entry into the dental hygiene program. For criteria and additional information, contact the Office of Admissions.

## Guaranteed Entry Program

The guaranteed entry program is designed for highly qualified high school students who are committed to completing a Bachelor of Science in Dental Hygiene at Old Dominion University. Students accepted into this program will be guaranteed a position upon completion of the prerequisites and candidacy requirements as outlined on the form by Old Dominion University School of Dental Hygiene at <http://hs.odu.edu/dental/academics/bs/about.shtml>.

## Advanced Placement Policy and Procedure

The School of Dental Hygiene at Old Dominion University has the option of awarding advanced placement for didactic and clinical experience taken at other institutions of higher education. Students accepted into the entry-level dental hygiene program with coursework from dental assisting, dental hygiene, or dental programs may apply for advanced placement within the program. The decision to award advanced placement is dependent on the length of time since the course was taken, grade received, course content, and whether the program is accredited by the American Dental Association (ADA) Commission on Dental Accreditation .

I. Students who have completed dental assisting, dental hygiene, or dental coursework within the past five years at a program that is accredited by the ADA:

### A. Requirements

- Receive at least a "C" in the course being requested.
- Provide transcripts from the institution awarding course credit to the Admission Chair of the School of Dental Hygiene.
- At the option of the Dental Hygiene Admission Chair, provide available course materials for evaluation including course syllabus and course description.

### B. Procedure

- Following acceptance into the entry-level dental hygiene program, the student will request consideration for advanced placement in writing. Requests for advanced placement should be provided to the Admission Chair in the month of May of the year of application.
- Students will be notified in writing of the decision for advanced placement credit from the Admission Committee. One of the following recommendations will be made:
  - Award course credit.
  - Require course(s) be taken for pass/fail.
  - Require course(s) be taken for credit.
- A copy of the evaluation and the recommendation from the Admission Committee will be placed in the student's academic folder. The decision of the Admission Committee is final.

II. Students who have completed dental assisting, dental hygiene, or dental coursework beyond the five-year period at a program that is accredited by the ADA are invited to challenge individual courses by passing a test for the desired courses. Successful completion (75% or higher) will exempt the students from the challenged course(s).

## Bachelor of Science Requirements

All courses with the prefix DNTH must be completed in a prescribed sequence within two academic years due to scheduling and space limitations. A minimum grade of C (2.00) must be obtained in all DNTH courses.

## Prerequisite Courses

Prerequisite requirements to the dental hygiene major are listed below. Students should enroll in other General Education courses in the prerequisite phase of study.

## Requirements

### Lower Division General Education Skills

Written Communication *	6
Oral Communication **	
Mathematics	3
STAT 130M	Elementary Statistics (required)
Language and Culture	0-6
Information Literacy and Research **	

### Lower Division General Education Ways of Knowing

Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics **	
The Nature of Science	8
CHEM 105N & CHEM 106N	Introductory Chemistry and Introductory Chemistry Laboratory
CHEM 107N & CHEM 108N	Introductory Organic and Biochemistry and Introductory Organic and Biochemistry Laboratory
Human Behavior	6
PSYC 201S	Introduction to Psychology (required)
SOC 201S	Introduction to Sociology (required)

### Impact of Technology \*\*\*

<b>Departmental Requirements ****</b>	<b>15</b>
CHP 318	Principles of Nutrition
BIOL 103	Basic Bacteriology
BIOL 250 & BIOL 251	Human Anatomy and Physiology I and Human Anatomy and Physiology II

Total Hours 47-53

\* Grade of C or better required in both courses.

\*\* Satisfied in the major.



\*\*\* Any T course outside the College of Health Sciences.

\*\*\*\* Must be completed with a C or better.

Students must complete the following courses prior to entering the School of Dental Hygiene program:

BIOL 103	Basic Bacteriology	4
BIOL 250 & BIOL 251	Human Anatomy and Physiology I and Human Anatomy and Physiology II	8
CHEM 105N	Introductory Chemistry	3
CHEM 106N	Introductory Chemistry Laboratory	1
CHEM 107N	Introductory Organic and Biochemistry	3
CHEM 108N	Introductory Organic and Biochemistry Laboratory	1
ENGL 110C	English Composition	3
PSYC 201S	Introduction to Psychology	3
SOC 201S	Introduction to Sociology	3

## Major Requirements

### Third Year

First Term	Hours	Second Term	Hours	Summer Term	Hours
DNTH 300	4	DNTH 305	3	DNTH 316	3
DNTH 301	3	DNTH 306	3	DNTH 317	2
DNTH 302	4	DNTH 307	2	Option D: six hours of elective upper-division courses from outside the College of Health Sciences	6
DNTH 303	3	DNTH 308	3		
DNTH 304	2	DNTH 309 DNTH 310	2 3		
	<b>16</b>		<b>16</b>		<b>11</b>

### Fourth Year

First Term	Hours	Second Term	Hours
DNTH 410	3	DNTH 416	3
DNTH 411	6	DNTH 417W*	3
DNTH 413	3	DNTH 418	6
DNTH 414	3	DNTH 419	3
DNTH 415	3		
	<b>18</b>		<b>15</b>

Total credit hours: 76

\* Grade of C or better required

## Upper Division General Education

- Option A. Approved Disciplinary Minor, 12 hours minimum; also second degree or second major.
- Option B. Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Health Sciences and not required by the major (6 hours)

## Requirements for Graduation

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 123 credit hours, which must

include both a minimum of 31 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Continuance Policy

In addition to the Old Dominion University continuance policies in this Catalog, the following policies are specific to all declared majors in the Gene W. Hirschfeld School of Dental Hygiene. A grade of D (1.00) in any dental hygiene course will result in academic dismissal from the program. Inability to attend clinical practice or community rotations due to an agency refusal will be cause for dismissal from the B.S.D.H. program.

## Policy on Readmission

1. A student who must repeat one or more courses in dental hygiene must first be readmitted to the dental hygiene program.
2. A student can be readmitted to the program only once.
3. Readmitted students must maintain a minimum grade of C (2.00) in all DNTH courses taken with a passing grade in courses taken for remediation.
4. Procedure for readmission:
  - a. The student must submit a letter to the chair of the School of Dental Hygiene outlining his or her intent for readmission.
  - b. The chair, in consultation with the faculty, will make a decision on the readmission request.
  - c. Readmission will be granted on a space-available basis only after regular admission has been filled. Cumulative and science course grade point averages are used for readmission criteria.

## Bachelor of Science in Dental Hygiene Degree Completion Program

The Bachelor of Science in Dental Hygiene (B.S.D.H.) degree completion program is designed for students who have completed a certificate or associate degree from an accredited dental hygiene program and desire to continue their education toward a Bachelor of Science in Dental Hygiene. The program provides an opportunity for the licensed dental hygienist to gain knowledge, skills, and attitudes necessary for expanded career opportunities in education, oral health promotion, research, community and public health, management, and marketing. This program also provides a strong foundation for graduate studies. A minimum of 120 credit hours is necessary to obtain the baccalaureate degree. The length of time required to complete the program and University requirements is determined by the number of acceptable college transfer credits; at least 30 credit hours must be taken at Old Dominion University. Students can expect to complete the program in three to four academic semesters of full-time study. The B.S.D.H. degree completion program is available on-line or as a hybrid of on-line and on-campus courses.

## Admission to the Bachelor of Science Degree Completion Program

A licensed dental hygienist educated at another institution who desires to pursue the Bachelor of Science in Dental Hygiene should apply to Old Dominion University as an upper-level dental hygiene transfer student. Formal acceptance as a dental hygiene major will be determined by the program director of the B.S.D.H. Degree Completion Program.

Transfer applicants must meet the following requirements:

1. Graduation from an accredited dental hygiene program.
2. Submission of application and official high school and college transcripts to the Office of Admissions, Old Dominion University.
3. Submission of School of Dental Hygiene B.S.D.H. degree completion program application found on website.
  - a. Official transcripts from high school and college academic institutions attended.
  - b. Copy of National Board Dental Hygiene Examination.

- c. Two professional letters of recommendation.
  - d. Current CPR/AED/First Aid certificate/biennially requested.
  - e. Current resume
4. Applicants who hold an associate of applied science degree rather than an associate of science degree must meet the University's lower-level General Education requirements.

## Curriculum for B.S.D.H. Degree Completion Program

### Requirements

Transfer students must satisfy the following:

1. Certificate or associate degree in dental hygiene from an accredited dental hygiene program.
2. Pass the Writing Sample Placement Test (WSPT).
3. Successful completion of the University Lower-Level General Education requirements and/or equivalent. The general education requirement in philosophy and ethics is satisfied in the major for the degree completion program.
4. Successful completion of department requirements or the equivalent:
 

STAT 130M	Elementary Statistics	3
CHEM 105N & CHEM 106N	Introductory Chemistry and Introductory Chemistry Laboratory	4
CHEM 107N & CHEM 108N	Introductory Organic and Biochemistry and Introductory Organic and Biochemistry Laboratory	4
BIOL 250	Human Anatomy and Physiology I	4
BIOL 251	Human Anatomy and Physiology II	4
BIOL 103	Basic Bacteriology	4
PSYC 201S	Introduction to Psychology	3
or PSYC 203S	Lifespan Development	
SOC 201S	Introduction to Sociology	3
5. Successful completion of up to 15 Upper-Division General Education credit hours.
6. Successful completion of five major courses:
 

DNTH 412W	Perspectives on Dental Hygiene Practice	3
DNTH 414	Educational Concepts for the Health Professional I	3
DNTH 415	Research Methods in the Health Sciences	3
DNTH 416	Administrative Leadership and Professional Development	3
DNTH 440T	Telehealthcare Technology	3
7. Current CPR certificate (renewed annually).
8. Successful completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better and the Senior Assessment Survey.

## Continuance

In addition to the Old Dominion University continuance policies, the following policy is specific to the B.S.D.H. degree completion program. A grade of C (2.00) is required in all DNTH courses for graduation. A grade of D (1.00) in any dental hygiene course will result in academic dismissal from the program.

## International Dental Hygiene

The School of Dental Hygiene, committed to solving global oral health problems, offers a variety of service learning programs in partnership with non-governmental agencies, academic institutions, and private organizations worldwide. Faculty-led experiences offer unique opportunities for students to travel abroad, develop cross-cultural competence, experience global health challenges, and engage in projects that advance oral health. International

locations are determined by the School of Dental Hygiene in conjunction with the Office of Study Abroad. Program participation requires approval from the School of Dental Hygiene and the Office of Study Abroad.

## Accelerated Bachelor of Science to Master of Science Program

Entry-level and B.S.D.H. degree completion dental hygiene students who have a 3.3 grade point average from each institution attended and who have senior standing may apply to the bachelor's to master's accelerated program. This program allows gifted undergraduate students the opportunity to take up to 12 credit hours of graduate course work and apply them to both degrees. Other restrictions apply. Consult with the School of Dental Hygiene for more information.

## The Dental Hygiene Research Center

The focus of the Dental Hygiene Research Center is to support research through collaboration and partnerships that will provide a foundation for dental hygiene services and practice, advance the practice of dental hygiene, and improve the oral health status of the public. Research capabilities are multifaceted with a wide variety of projects relating to occupational risk assessment as well as product and device testing. Multidisciplinary and interdisciplinary projects are developed with healthcare facilities, private industry, and other academic institutions. Undergraduate and graduate students are integrated into the research process, which contributes to the understanding between theory and practice.

## Medical Diagnostic & Translational Sciences

[www.hs.odu.edu/medlab/](http://www.hs.odu.edu/medlab/)

Roy Ogle, Chair

The School of Medical Diagnostic and Translational Sciences offers a coordinated program of courses and clinical experiences leading to degrees of Bachelor of Science in Medical Technology, Bachelor of Science in Nuclear Medicine Technology, and a post-baccalaureate certificate in cytotechnology. Students may also pursue a concentration in cytotechnology or ophthalmic technology through the Bachelor of Science in Health Sciences. In addition, the school offers a minor in medical technology and an accelerated, weekend program (BSMT) for medical laboratory technicians (MLT). Post-baccalaureate courses are available in molecular pathology and clinical diagnostics.

## Bachelor of Science in Medical Technology

[www.hs.odu.edu/medlab/academics/medtech](http://www.hs.odu.edu/medlab/academics/medtech)

Faye E. Coleman, Program Director

The medical technologist/medical laboratory scientist performs a vital role in the diagnosis and treatment of disease by performing clinical laboratory tests on patients' blood, body fluids, and other specimens. This includes clinical tests within the areas of chemistry, microbiology, hematology, immunology/serology, urinalysis, immunohematology, and molecular pathology.

The program is nationally accredited by the National Accrediting Agency for Clinical Laboratory Sciences, 5600 N River Road, Suite 720, Rosemont, IL 60018, 773 714-8880. Satisfactory completion of the program entitles graduates to write national certification examinations.

## Admission

Admission to the University does not constitute admission to the medical technology program. Students are admitted to the program after completion of two years of college study, which includes all program prerequisite courses. All program prerequisite courses must be completed with a grade of C (2.00) or better. The students then enter two years of a combined didactic and clinical phase congruent with the 2 + 2 concept. A grade of C (2.00) or better is required in all medical technology course work for continuance in the program. The program does not offer just the final clinical phase to transfer applicants from 3 + 1 programs. Applications to the program,

including all materials, must be submitted no later than February 1 for consideration for admission the following fall. Exemptions may be appealed only through the program director. Prospective students who fail to meet the February 1 deadline for formal admission will usually be allowed to take on-campus medical technology courses on a space-available basis. Permission must be first granted by the program director in advance of registration.

## Requirements

### Lower Division General Education

#### Skills

Written Communication (grade of C or better required in both courses)	6
Oral Communication (satisfied through major course requirements)	

Mathematics	6
STAT 130M Elementary Statistics	
MATH 102M College Algebra (Required for The Nature of Science courses)	
or MATH 103M College Algebra with Supplemental Instruction	

Language and Culture	0-6
Information Literacy and Research	3

#### Ways of Knowing

Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
PHIL 345E Bioethics (preferred)	
The Nature of Science	12

BIOL 121N & BIOL 122N General Biology I and General Biology I Lab	
CHEM 121N & CHEM 122N Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	
CHEM 123N & CHEM 124N Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	

Human Behavior	3
Impact of Technology (any upper-division T course outside the College of Health Sciences)	3

Total Hours	45-51
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#### Departmental Requirements

BIOL 250 & BIOL 251 Human Anatomy and Physiology I and Human Anatomy and Physiology II	8
CHEM 211 & CHEM 212 Organic Chemistry Lecture and Organic Chemistry Laboratory	5

Students must complete the following courses prior to entering the Medical Technology Program: BIOL 121N and BIOL 122N, BIOL 250 and BIOL 251, CHEM 121N and CHEM 122N, CHEM 123N and CHEM 124N, CHEM 211 and CHEM 212 and STAT 130M.

Total Hours	13
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### Major Requirements

#### Third Year

First Term	Hours	Second Term	Hours	Summer Term	Hours
MEDT 210	1	MEDT 309	3	MEDT 320	2
MEDT 307	2	MEDT 310	1	Clinical Practica 5 to 6 credits from fourth year second term courses	
MEDT 308	3	MEDT 313	1		
MEDT 311	3	MEDT 319	2		

MEDT 312	1	MEDT 326	3
MEDT 324	3	MEDT 336	1
MEDT 325	1	MEDT 327	1
MEDT 330	2	MEDT 337	1
MEDT 331	1	MEDT 339	1
		MEDT 340	1
		MEDT 351	3
	17		18

#### Fourth Year

First Term	Hours	Second Term	Hours
MEDT 403W	3	MEDT 404	4
MEDT 440	3	MEDT 406	5
		MEDT 452	5
		MEDT 454	4
		MEDT 457	1
		MEDT 458	1
	6		20

Total credit hours: 63

### Upper Division General Education

- Option A. Approved Disciplinary Minor, 12 hours minimum; also second degree or second major.
- Option B. Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Health Sciences and not required by the major (6 hours)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, a minimum of 121 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

### Bachelor of Science in Medical Technology—MLT to MT Weekend College Program

The B.S.M.T. Weekend Program is available for associate degree holders and former hospital or military program trainees. The curriculum is designed to meet the needs of local and distant practitioners. Program and University required courses are available on weekends and through distance learning.

### Lower Division General Education

#### Skills

Written Communication (grade of C or better required in both courses)	6
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Oral Communication (satisfied through major course requirements)

Mathematics	6
STAT 130M Elementary Statistics	
MATH 102M College Algebra (Required for the Nature of Science courses)	
or MATH 103M College Algebra with Supplemental Instruction	

Language and Culture	0-6
Information Literacy and Research	3

#### Ways of Knowing

Human Creativity	3
Interpreting the Past	3

Literature		3
Philosophy and Ethics		3
PHIL 345E	Bioethics (preferred)	
The Nature of Science		12
BIOL 121N & BIOL 122N	General Biology I and General Biology I Lab	
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	
CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	
Human Behavior		3
Impact of Technology (any upper-division T course outside the College of Health Sciences)		3
Total Hours		45-51

#### Departmental Requirements

BIOL 250 & BIOL 251	Human Anatomy and Physiology I and Human Anatomy and Physiology II	8
CHEM 211 & CHEM 212	Organic Chemistry Lecture and Organic Chemistry Laboratory	5
Students must complete the following courses prior to entering the Medical Technology Program: BIOL 121N and BIOL 122N, BIOL 250 and BIOL 251, CHEM 121N and CHEM 122N, CHEM 123N and CHEM 124N, CHEM 211 and CHEM 212 and STAT 130M.		
Total Hours		13

#### Major Requirements

Electives (including transfer and Experiential Learning Credit from MLT Training Program)		
MEDT 309	Medical Bacteriology	3
MEDT 311	Hematology	3
MEDT 315	Clinical Laboratory Diagnosis	3
MEDT 324	Clinical Instrumentation and Electronics	3
MEDT 326	Immunohematology	3
MEDT 340	Medical Parasitology, Mycology, and Virology	1
MEDT 350	Urinalysis	1
MEDT 351	Clinical Biochemistry	3
MEDT 403W	Management in the Clinical Setting	3
MEDT 440	Statistical Applications and Data Analysis in the Clinical Laboratory	3
MEDT 441	Clinical Hematology Competencies	1
MEDT 442	Clinical Microbiology Competencies	1
MEDT 443	Clinical Chemistry Competencies	1
MEDT 444	Clinical Blood Bank Competencies	1
MEDT 445	Advanced Clinical Practicum	3
MEDT 457	Medical Technology Seminar	1
Total Hours		34

#### Upper Division General Education

- Option A. Approved Disciplinary Minor, 12 hours minimum; also second degree or second major.
- Option B. Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Health Sciences and not required by the major (6 hours)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, minimum 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours

in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

### Minor in Medical Technology

A minor in medical technology requires a minimum of 12 semester hours of 300/400-level MEDT courses. Students may choose courses from a specific laboratory science discipline (hematology, microbiology, clinical chemistry, and immunohematology) or from several disciplines. All prerequisite courses must be completed. Selection of a plan or program of study must be done in consultation with the program director. For completion of the minor, students must have a minimum overall cumulative grade point average of 2.00 in all courses required for the minor exclusive of prerequisite courses and a minimum of six hours in upper-level courses in the minor requirement must be taken through courses offered by Old Dominion University. Substitutes of non-MEDT courses require the permission of the program director. Completion of the minor does not confer eligibility to write national certification examinations.

### Bachelor of Science in Nuclear Medicine Technology

[www.hs.odu.edu/medlab/academics/nmed/](http://www.hs.odu.edu/medlab/academics/nmed/)

Scott R. Sechrist, Program Director

Nuclear medicine technology is the medical specialty that utilizes sealed and unsealed radioactive materials in the diagnosis and treatment of disease. The nuclear medicine technology program at Old Dominion University is designed to prepare individuals as entry-level nuclear medicine technologists. Upon successful completion of the program, graduates are eligible to sit for a national exam for certification as a nuclear medicine technologist.

Nuclear medicine technologists are allied health professionals certified in nuclear medicine technology who, under the direction of an authorized physician user, are committed to applying the art and skill of diagnostic and therapeutic nuclear medicine procedures through the safe and effective use of radionuclides. Responsibilities include but are not limited to: direct patient contact, the preparation and administration of radiopharmaceuticals, patient imaging procedures including computer processing, laboratory testing, patient preparation, quality control and radiation safety. Nuclear medicine technologists can be employed in hospitals and imaging centers.

The program is accredited by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology.

A grade of C (2.00) or better in all nuclear medicine course work is required to continue in the program.

#### Admission

All admission materials must be received by October 15. Interviews are then scheduled for early November.

#### Requirements

##### Lower Division General Education

<b>Skills</b>		
Written Communication (grade of C or better required in both courses)		6
Oral Communication		3
Mathematics		6
STAT 130M	Elementary Statistics	
MATH 102M	College Algebra	
or MATH 103M	College Algebra with Supplemental Instruction	
Language and Culture		0-6
Information Literacy and Research		3
<b>Ways of Knowing</b>		
Human Creativity		3

Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
PHIL 345E Bioethics	
The Nature of Science	16
CHEM 105N & CHEM 106N Introductory Chemistry and Introductory Chemistry Laboratory	
CHEM 107N & CHEM 108N Introductory Organic and Biochemistry and Introductory Organic and Biochemistry Laboratory	
PHYS 101N & PHYS 102N Conceptual Physics and Conceptual Physics	
Human Behavior	3
Impact of Technology	3
HIST 304T History of Medicine, Disease, and Health Technology (or upper-division T course outside the College of Health Sciences)	
<b>Total Hours</b>	<b>52-58</b>

### Departmental Requirements

BIOL 250 & BIOL 251 Human Anatomy and Physiology I and Human Anatomy and Physiology II	8
Students must complete the following courses (or equivalent) prior to entering the nuclear medicine technology Program: BIOL 250 and BIOL 251, CHEM 105N, CHEM 106N, CHEM 107N and CHEM 108N, PHYS 101N and PHYS 102N, and MATH 102M and STAT 130M.	
<b>Total Hours</b>	<b>8</b>

### Major Course Requirements

Third Year					
First Term	Hours	Second Term	Hours	Summer Term	Hours
NMED 300	3	NMED 332	4	NMED 440	8
NMED 331	4	NMED 335	3		
		NMED 401	4		
		NURS 393	2		
	<b>7</b>		<b>13</b>		<b>8</b>
Fourth Year					
First Term	Hours	Second Term	Hours		
NMED 450	8	NMED 460	8		
NMED 402	4	NMED 410	3		
NMED 403	3	NMED 475W	3		
	<b>15</b>		<b>14</b>		

Total credit hours: 57

**Elective credit may be needed to meet the minimum requirement of 120 credit hours.**

### Upper Division General Education

- Option A. Approved Disciplinary Minor, 12 hours minimum; also second degree or second major.
- Option B. Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Health Sciences and not required by the major (6 hours)

A variety of clinical facilities in the Hampton Roads area are utilized for clinical education experiences. Students are responsible for providing

their own transportation to these sites. Students must meet established programmatic technical standards. Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, a minimum of 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Cytotechnology Concentration—Bachelor of Science in Health Sciences

[www.hs.odu.edu/medlab/academics/cyto/](http://www.hs.odu.edu/medlab/academics/cyto/)

Sophie K. Thompson, Program Director

The School of Medical Diagnostic and Translational Sciences offers a program in cytotechnology through the Bachelor of Science in Health Sciences.

Cytotechnologists are specially trained medical laboratory professionals who work with pathologists in detecting changes in cell samples from numerous body sites which allows the early diagnosis of cancer. This is done primarily with the use of the microscope to evaluate slide preparation of cell samples for abnormalities in structure, indicating cancer, precancerous lesions, benign tumors, infectious agents and inflammatory processes. They are also trained in specimen preparatory techniques.

The program of study is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 1361 Park Street, Clearwater, FL 33756; phone: 727-210-2350; e-mail: [mail@caahep.org](mailto:mail@caahep.org); website: [www.caahep.org](http://www.caahep.org) (<http://www.caahep.org>), in association with the American Society of Cytopathology.

Theory is reinforced through an integrated clinical phase which allows the student direct experience in a hospital or lab setting providing additional training in screening techniques and diagnostic procedures. Graduates are eligible to sit for national certifying ASCP exams.

Application to the cytotechnology program must be submitted by February 1 for the fall semester.

### Requirements

#### Lower Division General Education

##### Skills

Written Communication	6
ENGL 110C English Composition (grade of C or better required)	

ENGL 211C English Composition (grade of C or better required)	
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##### Oral Communication \*

Mathematics	3
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MATH 102M College Algebra	
or MATH 103M College Algebra with Supplemental Instruction	

Language and Culture	0-6
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Information Literacy and Research	3
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HLTH 120G Information Literacy for Health Professions (preferred)	
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##### Ways of Knowing

Human Creativity	3
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Interpreting the Past	3
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Literature	3
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Philosophy and Ethics	3
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PHIL 345E Bioethics (recommended)	
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The Nature of Science	16
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BIOL 121N & BIOL 122N General Biology I and General Biology I Lab	
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BIOL 123N & BIOL 124N	General Biology II and General Biology II Lab	
CHEM 105N & CHEM 106N	Introductory Chemistry and Introductory Chemistry Laboratory	
CHEM 107N & CHEM 108N	Introductory Organic and Biochemistry and Introductory Organic and Biochemistry Laboratory	
Human Behavior		3
Impact of Technology		3
HIST 304T	History of Medicine, Disease, and Health Technology (preferred but any upper- division T course outside the College of Health Sciences accepted)	
Total Hours		46-52

\* Met in the major with CYTO 424 and CYTO 497.

### Departmental Requirements

Health Sciences Core		9
CHP 415W	Critical Issues in Public/Community Health Administration *	
or MEDT 403W	Management in the Clinical Setting	
CHP 450	Public and Community Health Administration	
DNTH 415	Research Methods in the Health Sciences	
or NMED 300	Medical Terminology	
BIOL 250 & BIOL 251	Human Anatomy and Physiology I and Human Anatomy and Physiology II	8
BIOL 103	Basic Bacteriology	4
Students must complete the following courses prior to entering the cytotechnology program: BIOL 121N and BIOL 122N, BIOL 123N and BIOL 124N, BIOL 250 and 251, BIOL 103, CHEM 105N and 106N, CHEM 107N and 108N and the nine hours from the health sciences core courses.		
Total Hours		21

\* Grade of C or better required in CHP 415W or MEDT 403W.

### Major Course Requirements

#### First Semester:

CYTO 407	Clinical Histology (strongly recommended)	3
CYTO 428	Cytopreparatory Techniques and Procedures	2

#### Second Semester:

CYTO 403	Gynecological Screening Laboratory	3
CYTO 404	General Pathology	3
CYTO 405	Normal Gynecological Cytology	3
CYTO 415	Abnormal Gynecological Cytology	4
CYTO 442	Gastro-Intestinal Cytology	2
CYTO 458	Cytology Internship I	4

#### Third Semester:

CYTO 424	Respiratory Cytology	3
CYTO 444	Genitourinary Cytology	2
CYTO 445	Breast Cytology	3
CYTO 446	Body Fluids Cytology	2
CYTO 448	Non-Epithelial Cytology	2
CYTO 468	Cytology Internship II	4

#### Fourth Semester:

CYTO 455	Fine Needle Aspiration	5
CYTO 478	Cytology Internship III	8
CYTO 497	Cytology Senior Seminar	2
Total Hours		55

### Upper Division General Education

- Option A. Approved Disciplinary Minor, 12 hours minimum; also second degree or second major.
- Option B. Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Health Sciences and not required by the major (6 hours)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, a minimum of 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

### Certificate Option/Second Degree

A certificate in cytotechnology or second degree in health sciences is available to students who have a Bachelor of Science degree, with a minimum of 20 credit hours in biology and eight credit hours in chemistry.

### Ophthalmic Technology Concentration in the B.S.H.S.

<http://hs.odu.edu/medlab/academics/ophttech.shtml>

Lori J. Wood, MEd., COMT, Assistant Professor, Program Director

The concentration in ophthalmic technology is designed to produce an ophthalmic technologist with a strong background in the basic sciences and a high degree of technical competence in ophthalmic technology. The 22-month program begins the end of August of each year and is fully accredited by the Commission on Accreditation for Ophthalmic Medical Programs (CoA-OMP). The program is one of two in the country that grant college credits leading to a Bachelor of Science degree.

The pre-clinical and general-education courses are offered at or may be transferred into Old Dominion University. The clinical courses are offered through Old Dominion at the Tri-Cities Higher Education Center in Portsmouth, Virginia. Students learn and work closely with ophthalmology residents and staff in clinical facilities in Sentara Norfolk General Hospital and many private ophthalmologists' offices.

As a condition of graduation, students are required to sit for the national board certification exams given by the Joint Commission on Allied Health Personnel in Ophthalmology (JCAHPO).

Prior to consideration for admission to the ophthalmic technology program, each applicant must complete the required prerequisite courses, or equivalents, maintaining a grade point average of at least 2.00 (4.00 scale). For priority consideration, applications should be submitted no later than March 1 for the class starting in September. The program will accept applications until all slots are filled.

### Requirements

#### First Year

First Term	Hours	Second Term	Hours
ENGL 110C (grade of C or better required)	3	The Nature of Science	4
The Nature of Science	4	(Select any 'N' course; BIOL 116N preferred)	
(Select any 'N' course; BIOL 115N preferred)		BIOL 250	4

MATH 102M (or higher)	3	Human Behavior	3
(Department requirement; not automatically satisfied by associate degree)		(Select one 'S' course)	
Information Literacy	3	PSYC 201S (preferred)	
HLTH 120G (preferred)		Math or Science Elective	3
Oral Communication	3	STAT 130M (preferred)	
		Human Creativity	3
	<b>16</b>		<b>17</b>

### Second Year

First Term	Hours	Second Term	Hours
Math or Science Elective	3-4	CHP 450	3
BIOL 103 (preferred)		Choose one writing intensive course; grade of C or better required	3
Select one	3	CHP 415W	
ENGL 211C (grade of C or better required)		CHP 430W	
ENGL 221C (grade of C or better required)		MEDT 403W	
ENGL 231C (grade of C or better required)		Philosophy	3
Interpreting the Past (select one history course)	3	(Select one course)	
HIST 100H		PHIL 230E	
HIST 101H		PHIL 345E	
HIST 102H		PHIL 442E	
HIST 103H		Any PHIL 'P' course	
HIST 104H		The Impact of Technology	3
HIST 105H		HIST 304T (or other upper-division "T" course outside the College of Health Sciences)	
Literature (select one course)	3	Electives if needed to total 120 credit hours	
ENGL 112L			
ENGL 114L			
FLET 100L			

NMED 300 or DNTN 415 3

15-16

12

Total credit hours: 60-61

## Upper Division General Education

- Option A. Approved Disciplinary Minor, 12-24 hours minimum; also second degree or second major.
- Option B. Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Health Sciences and not required by the major (6 hours). PHIL upper-division Ethics "E" course and upper-division Technology "T" course outside the College of Health Sciences can be used to meet this option. Select Associate degrees may satisfy the "T" requirement.

### Third Year

First Term	Hours	Second Term	Hours	Summer Term	Hours
OPHS 311	4	OPHS 330	3	OPHS 350	5
OPHS 312	3	OPHS 335	5	OPHS 352	2
OPHS 320	5	OPHS 337	4		
OPHS 321	3				
	<b>15</b>		<b>12</b>		<b>7</b>

### Fourth Year

First Term	Hours	Second Term	Hours
OPHS 420	5	OPHS 422	5
OPHS 421	5	OPHS 423	5
OPHS 430	3	OPHS 440	3
	<b>13</b>		<b>13</b>

Total credit hours: 60

## Requirements for Graduation

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, a minimum of 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment. In addition, students must take the written National Board Exam with JCAHPO prior to graduation.

## Nursing

<http://www.odu.edu/nursing>

Karen Karlowicz, Chair

The School of Nursing offers programs leading to the degrees of Bachelor of Science in Nursing, Master of Science in Nursing and Doctor of Nursing Practice.

The School of Nursing plans to introduce a revised and updated pre-licensure undergraduate curriculum beginning in fall 2015. The new curriculum will admit a cohort of students each fall semester under one schedule, incorporate current recommendations for undergraduate nursing education, and will be designed to get graduates into the workforce and enrolled in graduate nursing programs more quickly. There will be no change in the number of credit hours for the major (66), and there will be no change in the number of credits required to graduate with a Bachelor of Science in Nursing (120). However, students admitted beginning in fall 2015 will be:

- Required to have all non-nursing education courses fully completed before admission to the nursing major; there are no exceptions to this requirement.
- Completing all courses in the nursing major in five consecutive semesters (vs. the current schedule that takes six semesters to complete).

For additional information on the new curriculum or admission requirements, please contact:

- Chief Academic Advisor for the Undergraduate Nursing Program, Mrs. Janice Hawkins (jhawkins@odu.edu); or
- College of Health Sciences Advising Center (<http://www.odu.edu/hs/advising>)

## Bachelor of Science in Nursing

Kay Palmer, Undergraduate Program Director; Janice Hawkins, Chief Academic Advisor

Graduates of the baccalaureate program in professional nursing are generalists prepared to care for culturally diverse individuals and groups across the lifespan in a complex global community. Upon completion of the innovative, technology-enhanced program, graduates are knowledgeable about current trends in health care, assume responsibility for their professional growth, and are prepared for graduate study in nursing. The program is fully accredited by the Commission on Collegiate Nursing Education (CCNE) and approved by the Virginia State Board of Nursing.

The baccalaureate curriculum is designed to accommodate the needs of students desiring to become registered nurses (prelicensure curriculum) and those who are already registered nurses holding hospital diplomas or associate degrees desiring to earn the B.S.N. degree (post-licensure). The prelicensure curriculum is offered in a traditional 36-month (no summers) format and a 24-month accelerated schedule year-round format. Upon satisfactory completion of the program, a graduate is eligible to take the National Council Licensing Examination for Registered Nurses (NCLEX-RN) for licensure as a registered nurse. The post-licensure curriculum is offered in both a full-time and part-time format. As part of the Distance Learning system, courses are offered on weekday evening times via live broadcast to a classroom or video streamed to a computer. Additionally, an on-line program of study is available. Most students enroll on a part-time basis.

## Admission

Admission to the School of Nursing is a competitive process. Applicants for admission to the baccalaureate program in nursing should apply initially to the Office of Admissions of Old Dominion University to seek admission to the University. Admission to the University does not constitute admission to the School of Nursing.

Applicants for admission to the undergraduate nursing program must complete prerequisite courses with a grade of “C” or better prior to being admitted to the School of Nursing. In some cases, the admissions committee of the School of Nursing may require additional course work. Transfer students may complete the prerequisite courses at another college or university but are responsible for having a transfer credit evaluation completed by the transfer evaluation unit in the Office of Admissions to determine that transfer courses are equivalent and acceptable to University requirements.

Applicants must complete a School of Nursing Supplemental Application to be considered for admission to the undergraduate nursing program. The School of Nursing Supplemental Application may be obtained directly from the School of Nursing Academic Advising Office or the School of Nursing website: <http://www.hs.odu.edu/nursing/>.

In summary the applicant must:

1. Apply and be admitted to the University as a degree-seeking undergraduate student.
2. Submit a School of Nursing supplemental application directly to the School of Nursing with photocopies of all previous college transcripts

attached. Submit all items in the same envelope. Do not mail transcripts in separate envelopes to the School of Nursing.

3. Have a transfer of credit evaluation completed by the transfer evaluation unit in the Office of Admissions.

## Prelicensure Admission

Students who wish to enter the prelicensure nursing major must submit a School of Nursing Supplemental Application by February 1 in order to be considered for fall admission. Late or incomplete prelicensure applications will not be considered. The prelicensure program admits students for the fall semester only. Admission to the School of Nursing prelicensure program is highly competitive.

Prelicensure applicant review is based on the following criteria:

1. Grade point average (GPA)
2. Admission to the University
3. Pre-admissions aptitude testing
4. Completion of prerequisite course work at Old Dominion University makes the applicant more competitive.
5. Health careers related experience makes the applicant more competitive.
6. Previous bachelor’s degree makes the applicant more competitive.

## Post-licensure Admission

Post-licensure applicant review is based on the following criteria:

1. Admission to the University
2. Successful completion of the prerequisite courses
3. Grade point average
4. Unencumbered RN license

## Concurrent Program

The Concurrent Enrollment program presents an opportunity for individuals to obtain a BSN in a timely manner while remaining in their local community. This program is for students who have earned a baccalaureate degree in another discipline and desire to change careers, enter professional nursing and obtain a baccalaureate degree in nursing (BSN).

The Concurrent Enrollment nursing student will complete all ODU BSN nursing courses online while concurrently enrolled in their AAS nursing courses at a partner institution. Advisors work with students to develop an individual plan of study to fulfill the requirements. The Concurrent Enrollment program contributes to the BSN prepared workforce as well as prepares RNs for graduate programs by creating a seamless progression from the AAS to the BSN.

Following graduation from the AAS program and successful completion of the NCLEX RN licensure exam, the student will be awarded 33 nursing transfer credits (at no cost) toward completion of the Bachelor of Science in Nursing degree. Fall enrollment is available.

The nursing application is supplementary to the University application. Please return the concurrent enrollment nursing application directly to the School of Nursing with unofficial (photocopied) transcripts and letter of acceptance to the RN program of the partner institution attached.

## Concurrent Program Admission

Concurrent program admission eligibility is based on the following criteria:

1. Prior completion of a bachelor’s degree or higher from a regionally accredited institution.
2. Admission to the University
3. Admission to a prelicensure nursing program of a partner institution
4. Grade point average
5. Completion of the following prerequisite courses or transfer equivalents:

BIOL 103 CHEM 105N/CHEM 106N  
BIOL 250 STAT 130M  
BIOL 251 SOC 201S



## Guaranteed Entry Program

The nursing program offers a guaranteed entry program. This program is designed for highly qualified high school students who are committed to completing a Bachelor of Science in Nursing at Old Dominion University. Applicants must meet and maintain eligibility requirements as defined by the program. For more information, contact the pre-nursing advisor at 683-5137.

## Transfer of Nursing Credits

Students seeking to transfer NURSING credits from another NLNAC or CCNE accredited BSN program must submit photocopies of all nursing course syllabi for which they desire transfer credit approval. The School of Nursing Admission's Committee and nursing faculty will review the transfer course content for comparability with ODU nursing courses and determine if advanced placement in the BSN curriculum is appropriate.

Because of the dynamic nature of the nursing profession, currency of both nursing content and clinical skills is essential. Patient safety is of critical concern and is compromised when a student has out-of-date knowledge and/or less than competent nursing care skills. Transfer of nursing credits into the BSN curriculum may be affected if there has been a lapse of time greater than one year since previous nursing enrollment or by availability of clinical placements.

## Continuance Policies

1. A grade of C (2.00) or better is required in all nursing courses to continue in the nursing program.
2. An average of 80% or better on objective tests within a nursing course is required to earn a grade of C (2.00). A student who earns an average less than 80% on objective tests for a nursing course is awarded a grade of D or F and will not be considered in good academic standing in the major.
3. A cumulative grade point average of 2.00 or better is required to continue in the nursing program.
4. A nursing student who fails a nursing course and is readmitted to the nursing program is allowed to repeat the failed course only once.
5. A student who leaves the major and is readmitted may be required to take additional course work prior to or concurrent with readmission.
6. A student may be readmitted to the nursing major only once.

**Note:** Policies and procedures are outlined in more detail in the School of Nursing Student Handbook (on the web). All students accepted into the nursing major are responsible for familiarizing themselves with this handbook upon entry into the major.

## Clinical Caution

Clinical Caution is a means by which difficulties meeting specific objectives in a clinical course can be identified and monitored within a single clinical course.

The evaluation of the student's clinical performance is based on the professional judgment of the clinical faculty. A student may be placed on Clinical Caution if the clinical faculty member determines that the student is having difficulties meeting specific clinical objectives. This is a method to identify and monitor behaviors that interfere with the attainment of clinical objectives identified on the Clinical Performance Appraisal. **A student on Clinical Caution must correct the deficiencies in order to pass the clinical course.**

- The student may be placed on Clinical Caution at any point in the clinical course.
- The student will be notified verbally of the Clinical Caution and the reason(s) for the Caution. The course coordinator must be notified of the Clinical Caution within 24 hours.
- The student will be given a "Plan for Success" that specifies the outcomes that must be attained for successful completion of the course.
- A copy of the "Plan for Success" will be e-mailed to the academic advisor and all clinical course coordinators for classes in which the student is enrolled. Clinical course coordinators will be responsible for

notifying clinical course instructors of the Caution and the weaknesses noted.

If the student is able to attain minimum competence in all criteria identified on the "Plan for Success" but the clinical faculty assessment is that student behavior warrants continued monitoring, the clinical faculty and course coordinator may place a student on Clinical Notice.

A student who successfully meets the criteria specified in the "Plan for Success" in addition to the course Clinical Performance Appraisal will receive a passing grade for the clinical course. An unsuccessful student may apply to the Undergraduate Admissions, Continuance, and Advanced Standing Committee to retake the course in the future unless this is the second failure of nursing undergraduate courses.

## Clinical Notice

Clinical Notice is a means by which patterns of concern and/or clinical course objectives in which the student is minimally competent can be identified and monitored between clinical courses and consecutive semesters.

The evaluation of the student's clinical performance is based on the professional judgment of the clinical faculty. A student may be placed on Clinical Notice if the clinical faculty member determines that the student is having difficulties meeting specific clinical objectives or displays patterns of concerning behavior in more than one clinical course. This is a method to identify and monitor behaviors that interfere with the attainment of clinical objectives identified on the Clinical Performance Appraisal. **Clinical Notice can carry over between clinical courses or consecutive semesters.**

- The student may be placed on notice at any point in the clinical course based on the assessment of student performance. Clinical Caution is not required prior to Clinical Notice.
- The student will be verbally notified of the notice and the reason(s) for the Clinical Notice. The course coordinator must be notified of the Clinical Notice within 24 hours.
- A letter detailing the reason for Clinical Notice will be sent within five working days of verbal notification of being placed on notice and include the date, time and place for the counseling session.

A counseling session will be held with the student and Clinical Review Committee (CRC). The CRC constitutes the course coordinator from each clinical course in which the student is enrolled and may include clinical faculty.

- The student is expected to participate in the counseling session and will be given an opportunity to respond to the Clinical Notice letter with oral and written materials.
- A "Plan for Success" will be developed to include required activities, schedules for activities, criteria for removal from notice and deadline for completion.
- If at the conclusion of the counseling session the student does not agree with the Clinical Notice, the student may appeal the decision to the Undergraduate Program Director.

The student will be evaluated by the clinical faculty and course coordinator during and at the completion of the Clinical Notice period. The course coordinator will make a recommendation to the Clinical Review Committee who then may remove the student from notice, extend the notice period or move to dismiss the student from the program at any time.

- If the student meets the requirements in the "Plan for Success," the Clinical Notice may be removed.
- If the notice is extended to a subsequent semester, the course coordinator for the clinical in which the Clinical Notice was initiated is responsible for notifying the course coordinators for the clinical courses in which the student will be enrolled during the next semester. The subsequent semester course coordinators will then constitute the Clinical Review Committee for the student.
  - The student may appeal the decision to extend the notice period with the Undergraduate Program Director.

- **If at any point the student clinical behaviors threaten patient safety and well-being or violate professional standards as determined by clinical faculty, the student will receive a grade of F and will not be allowed to continue in the clinical course.**
- A student who successfully meets the criteria specified in the "Plan for Success" in addition to the Clinical Performance Appraisal will receive a passing grade for the clinical course.
- An unsuccessful student may apply to the Undergraduate Admissions, Continuance, and Advanced Standing Committee to retake the course in the future unless this is the second failure of nursing undergraduate courses.
  - The student may appeal the decision to terminate the Clinical Notice period and/or continuation in the course with the Undergraduate Program Director.

Decisions of the Clinical Review Committee will be based on student performance during notice, past performance in the academic program, results of counseling sessions and all student data relative to their undergraduate performance. These are academic proceedings and legal representation is not allowed during these proceedings.

A student may be placed on Clinical Notice no more than twice during the program and the duration of any notice may not exceed two consecutive semesters. If a student is determined to require a third clinical notice or any single notice would enter a third semester, the student will earn an F for the course and, if eligible, reapply for admission to the BSN curriculum.

**Students on Clinical Notice will not be eligible to attend Transition to Professional Nursing Practice clinical NURS 431- Preceptorship.**

- Since the Preceptorship clinical experience does not include direct faculty supervision while providing patient care, no student will be allowed to begin the Preceptorship clinical if they are on Clinical Notice.
- Students who enter their last semester on Clinical Notice must complete NURS 441 Rehabilitation Nursing Clinical during the first half of the semester, meet all stipulations in the "Plan for Success" and be released from Clinical Notice prior to being allowed to begin the preceptored clinical experience.
- If a student is placed on Clinical Notice in NURS 441 and does not exceed the Clinical Notice semester stipulations as noted above, the student may not enter NURS 431 until the terms of the "Plan for Success" have been successfully met. A directed medical-surgical clinical experience (two semester credits) to demonstrate competencies in the "Plan for Success" will be required prior to entering NURS 431. The medical surgical experience will be arranged to coincide with a medical surgical clinical course offered in the subsequent semester.

All documentation will be placed in the student's academic folder in the undergraduate nursing program office.

**Dismissal**

Notwithstanding any to the contrary, willful conduct jeopardizing patient safety will result in disciplinary action up to and including dismissal for the first offense.

The Clinical Review Committee may recommend to the Admissions, Continuance and Advanced Placement Committee that dismissal from the program is appropriate. A student may be dismissed from the program without having a notice period. The student will be notified at the time of the decision. Dismissal is based on the evaluation of the student's performance and abilities as well as demonstration of student behaviors that endanger patient safety and well-being and/or violate the standards of the profession. Dismissal is a result of inability to satisfactorily perform the required functions in clinical learning experiences, demonstrate a mastery of theoretical course work, violation of the Honor Code and/or violation of the standards of the profession.

The student may appeal the dismissal recommendation of the Clinical Review Committee in writing to the Undergraduate Program Director within five working days. See the appeals process in the ODU School of Nursing Student Handbook, Undergraduate Policies.

A student who is found in violation of the University Honor Code and receives a sanction by the Honor Council or University Hearing Officer will be dismissed from the undergraduate program in nursing.

**Appeals Process**

A student may appeal a course grade or dismissal decision on the basis of prejudice or caprice. The burden of proof rests with the student.

1. Students must initiate the appeal within one semester (fall, spring) of earning the grade or receiving the dismissal decision.
2. The student will first consult with the instructor (for a grade appeal) or the Clinical Review Committee (for a clinical dismissal appeal).
3. If the student is not satisfied with the results of the conference and wishes to pursue the appeal, the case must be presented in writing for a first-level appeal. The student's appeal letter must
  - a. State specific reasons and give examples of faculty prejudice or caprice,
  - b. Show that prejudice or caprice affected the awarding of the final course grade or dismissal decision, and
  - c. Be presented as a complete package and include all supporting documentation.
    - i The student will submit the appeal letter to the undergraduate program director or, if the undergraduate program director is the course coordinator, to the chair of the School of Nursing.
    - ii If the chair of the School of Nursing is the instructor, the student will submit the appeal to the dean.
4. If it is concluded at the first-level appeal that there is no cause for complaint, the person to whom the appeal was submitted will notify the student in writing that the appeal is denied. The student may then submit a second-level appeal.
  - a. If the chair or undergraduate program director initially concludes in the first-level appeal that there is no cause for complaint, the student has the right to appeal to the dean. The student should request in writing that the chair forward the appeal package to the dean to initiate the second-level appeal.
  - b. If the instructor/course coordinator is the chair and the student has appealed directly to the dean and the dean concludes in the first-level appeal that there is no cause for complaint, the student has the right to appeal to the provost and vice president for academic affairs to initiate the second-level appeal.
5. If the person to whom the second-level appeal is submitted concludes that there is no cause for complaint, the student will be notified in writing that the appeal process is complete and no further appeal is allowed.
6. If during the first- or second-level appeal process it is concluded that there may be valid cause for complaint, the person to whom the appeal has been submitted should consult with the instructor and student and attempt to mediate the dispute. If mediation fails, the person to whom the appeal has been submitted will offer to form a committee to carry out an independent investigation and a hearing will be held.
  - a. The person to whom the appeal has been submitted will convene a committee from the school or college. The committee will consist of two faculty and one student. Both the instructor and student will have the right to challenge, for valid cause, any or all of the members of the committee, and in that event, replacements will be appointed and no further challenge will be permitted. The committee will hear the instructor, the student and other pertinent witnesses. The hearing will be taped, but the tapes will be erased after one year following disposition of the case. The committee, after careful deliberation, will make its recommendation to the person to whom the appeal was submitted, who will relay the information to the instructor and the student.
  - b. If the committee finds that there is no cause for complaint the appeal process is complete and no further appeal on the merits of the case is allowed. Only one hearing on the merits of the case is allowed.

- c. If the committee finds on behalf of the student and recommends a change of grade or dismissal decision, appropriate action will follow.
- d. If either the instructor or student believes that the established procedures for the appeal have not been followed, an appeal for a rehearing may be made to the person identified as the second level of appeal. The only basis for appeal will be the failure to have been provided due process as prescribed by the policy.

For a complete explanation of the University's Grade Appeal Procedure, please refer to the Academic Information section of this Catalog. (p. 60)

## Honors Program for Prelicensure Nursing Majors

The School of Nursing has elected to offer departmental honors to interested and qualified undergraduate students. The honors curriculum reflects the school's commitment to scholarship, leadership, clinical practice and community service.

Applications to the Honors Program take place during the semester when prelicensure students complete the Gerontology course. Post-licensure students may apply after completing two nursing courses. Acceptance is limited to approximately 10% of the class size.

Application to the Honors Program may be made by students who are interested in receiving a Bachelor of Science in Nursing degree with Honors and meet the following requirements:

1. A minimum GPA of 3.50.
2. Faculty recommendation.

Applications will be distributed in Gerontology class for the prelicensure students and may be found online for the post-licensure students. Honors advisors will obtain faculty recommendations for the applicants.

Students who are selected for the Honors Program must complete the following requirements in addition to regular course and clinical requirements.

1. Completion of required departmental honors courses
  - a. Nursing 387 Nursing Science in place of Nursing 363 (pre- and post-licensure students).
  - b. Nursing 487W in place of 480W (prelicensure students) or 488W Nursing Leadership in place of 490W (post-licensure students).
  - c. Nursing capstone course, Nursing 489 in place of 431 (prelicensure students) or 486 in place of 403 (post-licensure students).
2. Design and implement a community service project encompassing 40 or more volunteer hours. This is above and beyond the clinical hours in community health or participation in Student Nursing Association projects.

## Traditional Curriculum for Prelicensure Students

The guide for the traditional curriculum lists the minimal prerequisite courses in the freshman year that must be completed with a grade of C or better for eligibility for admission to the major: Chemistry 105N/106N, Biology 250, Biology 251, English 110C and Sociology 201S. The curriculum guide below illustrates a suggested course of study for the four-year program. The nursing major begins in the sophomore year; additional non-nursing general education and support courses are also indicated. Students must complete the entire curriculum of 120-126 credits (depending upon foreign language exemption) to meet degree requirements. Nursing courses are taken in the order listed. Specified nursing departmental requirement courses must be taken prior to the junior year in nursing.

### Freshman

First Term	Hours	Second Term	Hours
CHEM 105N*	3	BIOL 251*	4

CHEM 106N*	1	SOC 201S*	3
BIOL 250*	4	ENGL 211C**	3
ENGL 110C*	3	Nature of Science Way of Knowing	4
Human Creativity Way of Knowing	3		
	<b>14</b>		<b>14</b>

### Sophomore

First Term	Hours	Second Term	Hours
NURS 300**	3	NURS 301**	3
NURS 302**	2	NURS 303**	2
NURS 310**	1	NURS 374**	2
BIOL 103**	4	NURS 430**	2
STAT 130M**	3	Interpreting the Past Way of Knowing	3
PSYC 203S**	3	Literature Way of Knowing	3
Elective	1	Philosophy and Ethics Way of Knowing	3
	<b>17</b>		<b>18</b>

### Junior

First Term	Hours	Second Term	Hours
NURS 320	3	NURS 311	1
NURS 321	2	NURS 330	3
NURS 350	3	NURS 331	1
NURS 351	1	NURS 340	3
NURS 363	3	NURS 341	2
Upper Division Elective Course***	3	NURS 375	2
		Upper Division Elective Course II****	3
	<b>15</b>		<b>15</b>

### Senior

First Term	Hours	Second Term	Hours
NURS 312	1	NURS 480W	3
NURS 420	3	NURS 431*****	3
NURS 421	2	NURS 440	2
NURS 450	3	NURS 441	2
NURS 451	2	NURS 471	2
NURS 470	2	NURS 358	2
	<b>13</b>		<b>14</b>

Total credit hours: 120

\* These courses are PREREQUISITES for the nursing major and must be completed before NURS 300. A grade of C or better is required in prerequisite courses.

\*\* These courses must be completed prior to the Junior year. A grade of C or better is required in ENGL 211C.

- \*\*\* Upper Division Technology T course outside the College of Health Sciences.
- \*\*\*\* Outside the College of Health Sciences and not required by the major.
- \*\*\*\*\* Nursing 431 must be completed in the last semester of the major.

Please note: The University General Education requirement for six credits of foreign language must be met by any student not exempt from the requirement. The following exemptions exist for the foreign language requirement:

1. High school graduate prior to December 31, 1985, or
2. Three years of one foreign language in high school, or
3. Two years in each of two different foreign languages in high school

Students may also meet the foreign language requirement by completion of a university-parallel associate degree.

The oral communication and information literacy general education requirements are met through the major.

## UPPER DIVISION GENERAL EDUCATION

- Option A. Approved Minor, 12-24 hours; also second degree or second major.
- Option B. Interdisciplinary Minor, 12 hours specified by the department, 3 of which may be in the major area of study.
- Option C. International business and regional courses or an approved certification program, such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Health Sciences and not required by the major (6 hours)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120-126 credit hours, which must include both a minimum of 30-32 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Accelerated Curriculum for Prelicensure Students

The guide for the accelerated curriculum lists the prerequisites, general education and departmental requirement courses supporting the major. In addition to completing the prerequisite courses, students applying to this curriculum should complete all of the non-nursing courses prior to beginning the major. Nursing courses are taught in fall, spring and summer semesters for two calendar years. Summer enrollment is required.

Students desiring to enroll in the accelerated program should have completed the following courses prior to beginning the nursing major:

BIOL 250	Human Anatomy and Physiology I *	4
<b>Human Creativity Way of Knowing</b>		3
BIOL 251	Human Anatomy and Physiology II *	4
<b>Interpreting the Past Way of Knowing</b>		3
CHEM 105N & CHEM 106N	Introductory Chemistry and Introductory Chemistry Laboratory *	4
BIOL 103	Basic Bacteriology	4
STAT 130M	Elementary Statistics	3
ENGL 110C	English Composition *	3
Nature of Science Way of Knowing		4
<b>Philosophy and Ethics Way of Knowing</b>		3
ENGL 211C	English Composition *	3
<b>Language and Culture I</b>		3
SOC 201S	Introduction to Sociology *	3
<b>Language and Culture II</b>		3

PSYC 203S	Lifespan Development	3
<b>Literature Way of Knowing</b>		3
Elective		1
<b>Total Hours</b>		54

\* Must be completed with a grade of C or better.

Please note: All prerequisite courses must be completed with a grade of C (2.00) or better. (A grade of C- will not transfer to Old Dominion University.)

See the traditional curriculum for prelicensure students or the General Education section of this Catalog for specific course numbers in Human Creativity, Philosophy and Ethics, Interpreting the Past, Literature and the possible exemption for foreign languages.

### First Year

First Term	Hours	Second Term	Hours	Summer Term	Hours
NURS 300	3	NURS 311	1	NURS 320	3
NURS 302	2	NURS 312	1	NURS 321	2
NURS 310	1	NURS 301	3	NURS 350	3
NURS 430	2	NURS 303	2	NURS 351	1
Upper Division Elective, General Ed Course I *	3	NURS 363	3	NURS 375	2
		NURS 374	2		
		Upper Division Elective, General Ed Course II **	3		
	<b>11</b>		<b>15</b>		<b>11</b>

### Second Year

First Term	Hours	Second Term	Hours	Summer Term	Hours
NURS 330	3	NURS 420	3	NURS 431 ***	3
NURS 331	1	NURS 421	2	NURS 440	2
NURS 340	3	NURS 450	3	NURS 441	2
NURS 341	2	NURS 451	2	NURS 480W	3
NURS 470	2	NURS 471	2	NURS 358	2
	<b>11</b>		<b>12</b>		<b>12</b>

Total credit hours: 72

- \* Upper Division Technology T course outside the College of Health Sciences.
- \*\* Outside the College of Health Sciences and not required by the major.
- \*\*\* Nursing 431 must be completed in the last semester

## Post-licensure Curriculum (for Registered Nurses)

The post-licensure curriculum is available online or live on the main campus, at local higher education centers, at many distance learning sites, and video streamed using the Blackboard format. Please check with the School of Nursing for a complete listing of available sites. Students may start the major in the fall semester (online, distance learning or video streamed) or spring semester (only online).

Requirements for admission to the post-licensure curriculum include; successful completion of all 100-200 level general education and

departmental courses (see listing), admission to the university and an unencumbered RN license. A part-time sequence of major courses is provided. Attendance in summer session is necessary. Full-time study is available as well. To meet degree requirements, students must complete the entire curriculum of 120-126 credits (depending upon foreign language exemption). Based upon prior learning and successful progression in the major, registered nurse students are granted 33 experiential learning credits in nursing.

ENGL 110C	English Composition *	3
CHEM 105N & CHEM 106N	Introductory Chemistry and Introductory Chemistry Laboratory	4
BIOL 250	Human Anatomy and Physiology I	4
BIOL 251	Human Anatomy and Physiology II	4
BIOL 103	Basic Bacteriology	4
SOC 201S	Introduction to Sociology	3
ENGL 211C	English Composition *	3
STAT 130M	Elementary Statistics	3
Language and Culture		0-6
Human Creativity Way of Knowing		3
Nature of Science Way of Knowing		4
Interpreting the Past Way of Knowing		3
Literature Way of Knowing		3
Philosophy and Ethics Way of Knowing		3
PSYC 203S	Lifespan Development	3
Elective		1
Total Hours		48-54

\* Must be completed with a grade of C or better

### Upper Division/Major Requirements

NURS 305	Health Assessment	3
NURS 306	Theoretical Foundation of Professional Nursing Practice	3
NURS 363	Nursing Science	3
NURS 401	Career Pathway: Assessment *	4
NURS 402	Career Pathway: Development	4
NURS 403	Career Pathway: Expanding Horizons **	4
NURS 458	Studies in Professional Nursing	3
NURS 464	Developing Case Management Skills: Clinical Pathways and Outcomes	3
NURS 490W	Nursing Leadership	3
NURS 492	Community Health Nursing	3
Upper Division General Ed Elective I ***		3
Upper Division General Ed Elective II ****		3
NURS 398	Clinical Nursing Concepts I *****	17
NURS 498	Clinical Nursing Concepts II *****	16
Total Hours		72

\* Nursing 401 must be taken in the first semester of nursing courses

\*\* Nursing 403 must be taken in the last semester of nursing courses

\*\*\* Upper Division Technology T course outside the College of Health Sciences.

\*\*\*\* Outside the College of Health Sciences and not required by the major.

\*\*\*\*\* Advanced Placement Credits awarded upon completion of 14 credits in major.

\*\*\*\*\* Advanced Placement Credits awarded upon completion of 26 credits in major.

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120-126 credit hours, which must

include both a minimum of 30-32 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## General Prelicensure Policies

### Physical Exam/CPR/Liability Insurance

1. All prelicensure students are required to have an initial physical exam completed and submitted by the first week of courses in the major.
2. Returning prelicensure students (second year, third year) must have an annual PPD and returning physical form completed and submitted by the first week of courses in the fall semester.
3. All prelicensure students must provide written documentation of Cardio-Pulmonary Resuscitation certification (professional level course) each year by the first week of courses in the semester.
4. Professional liability insurance is required for all clinical courses. The University covers this requirement for students enrolled in required clinical courses for the activities associated with those courses.
5. Due to the intimate nature of nursing practice with vulnerable populations, criminal background/sex offender status checks are required of all prelicensure students.

### Computer Competency Requirements

It is strongly recommended that nursing majors (pre- and post-licensure) have a personal computer. It is required that post-licensure RN-BSN students enrolled in online web courses in the major have access to a WebCam and headset, and this will be required in some online courses.

Faculty have identified the following basic computer skills as imperative for students in the BSN program.

1. Locate a file on: hard drive, disk, and server if appropriate
2. Save a file on a specific drive and folder
3. Change drives
4. Connect to an ISP
5. Navigate between two or more applications without closing and reopening (multi-tasking)
6. Open a new file
7. Open an existing file
8. Save a file
9. Rename a file (save as)
10. Cut text
11. Paste text
12. Format text
13. Change line spacing
14. Download and upload e-mail attachment files

### Technical Standards

Students admitted to the undergraduate nursing program are expected to complete all program requirements. Any student who thinks he or she does not possess one or more of the following skills should seek assistance from an academic counselor, faculty advisor and Educational Accessibility concerning any flexibility in program requirements and possible accommodation through technical aids and assistance. Students are expected to:

1. Assimilate knowledge acquired through lectures, discussions, demonstrations and readings and make appropriate judgments/decisions in a timely manner during clinical practice.
2. Comprehend and apply basic mathematical skills, e.g. ratio and proportion concepts, use of conversion tables, calculation of drug dosages.
3. Demonstrate competence in concepts from biological, sociological and psychological sciences.

4. Communicate effectively (verbally and non-verbally) and prepare written documents that are correct in style, grammar and mechanics. Communicate effective oral presentations to a variety of audiences.
5. Read charts, records, scales, fine print, handwritten notations and distinguish colors.
6. Distinguish tonal differences and use phones.
7. Distinguish odors.
8. Differentiate changes in sensation, e.g. pulses, temperature, texture.
9. Manipulate equipment necessary for providing nursing care to clients, e.g. syringes, infusion pumps, life support devices.
10. Move from room to room and maneuver in small places.
11. Perform one-rescuer/two-rescuer cardiopulmonary resuscitation (CPR) on adults, children and infants without any limitation to space or environment.
12. Establish interpersonal rapport with individuals, families and community groups who have a wide range of social, emotional intellectual and cultural differences.

A student must have a criminal background and sex offender status verification completed prior to beginning the nursing major. Clinical agencies may request to review the results and, based upon the review, reserve the right to prohibit a student from attending clinical practice in that facility. Inability to attend clinical practice due to a clinical agency refusal will be cause for dismissal from the BSN program.

A physician or nurse practitioner must attest that a student is in good physical and mental health. Documentation indicating immunity to measles, mumps, rubella, varicella, Hepatitis B, influenza or other clinical agency requirements must be provided to the School of Nursing for clinical placement. Students are required to maintain current Health Professional Basic Life Support certification. The School of Nursing Physical Exam form inquires: Does this individual have any physical or mental conditions, disabilities or medical limitation that would prohibit the individual from functioning in the capacity of a Registered Nurse?

## **Nursing Practice/Performance Expectations**

The curriculum for the BSN program includes 66 credits in the nursing major and provides classroom instruction, laboratory and clinical practice experience for students. This comprehensive program includes experiences in a variety of nursing specialties (critical care, obstetrics, pediatrics, adult health, community, rehabilitation and psychiatric nursing) giving the graduate a broad-based foundation in nursing practice. Graduates are not specialists, but generalists prepared for entry-level practice in these areas of nursing practice. While in nursing learning labs, students will serve as models for the practice of nursing skills.

Students in the BSN program are expected to provide total, intimate personal care to both male and female clients of all ages, ethnic and racial backgrounds. These activities may include, but are not limited to:

1. Complete baths
2. Urinary catheterizations
3. Colonic enemas
4. Vaginal douches
5. Perineal care
6. Breast exams
7. Testicular exams
8. Providing nutrition (feeding) with all types of diets

Students are expected to interact in a professional, non-judgmental manner with clients, classmates, faculty and other health team members of all ethnic, religious and national backgrounds. No exceptions for cultural differences will be made for any student.

# College of Sciences

## College of Sciences

Chris D. Platsoucas, Dean  
Ravi Mukkamala, Associate Dean  
Terri Mathews, Associate Dean

The College of Sciences' degree programs are designed to prepare students for careers in the sciences or to lay broad foundations for specialized training in these fields of knowledge.

The college is comprised of the Departments of Biological Sciences, Chemistry and Biochemistry, Computer Science, Mathematics and Statistics, Ocean, Earth and Atmospheric Sciences, Physics, and Psychology. The Departments of Biological Sciences, Chemistry and Biochemistry, Mathematics and Statistics, Ocean, Earth and Atmospheric Sciences, and Physics cooperate with the Darden College of Education to provide the necessary courses for certification to teach in the Commonwealth.

## Undergraduate Degree Requirements for all Majors in the College of Sciences

### Core Requirements

Fulfilling the University General Education Requirements for a specific program satisfies the degree requirements for the College of Sciences. Refer to the University General Education section of this Catalog for details about which courses satisfy the skills, ways of knowing, and upper-division requirements of the General Education program.

Additional major requirements are listed under the various departmental programs.

### General Requirements

1. Students wishing to take a major or a minor in the College of Sciences must declare with the appropriate department.
2. The College of Sciences allows a maximum of four hours of activity credit to be applied toward any degree granted by the college. Activity credit beyond the four-hour maximum may be permitted in unusual circumstances with the written approval of the dean of the college. Activity credit required by a student's major department will not be counted toward the credit limitation. (See the Catalog section on Activity Credits for the definitions and other restrictions on activity course credits.)

## College of Sciences Degree Programs

### Health-Related Sciences

Subject	BS	MS	PhD
Biomedical Science			X <sup>1</sup>
Biological Chemistry Track			X <sup>1</sup>
Clinical Psychology			X <sup>3</sup>

### Life Sciences

Subject	BS	MS	PhD
Biology	X	X	X <sup>4</sup>
Biochemistry	X	X <sup>2</sup>	X <sup>10</sup>
Psychology	X	X	X <sup>5</sup>

### Physical Sciences

Subject	BS	MS	PhD
Chemistry	X	X	X
Computer Engineering		X <sup>8</sup>	X <sup>8</sup>

Computer Science	X	X	X <sup>8</sup>
Computer Science (Computer Information Sciences)		X <sup>9</sup>	
Mathematics	X	X <sup>7</sup>	X <sup>6</sup>
Ocean and Earth Science	X	X	
Oceanography			X
Physics	X	X	X

1. Ph.D. in biomedical sciences is an interdisciplinary degree program based in the College of Sciences. Tracks include general biomedical sciences and biochemistry.
2. Emphasis area within chemistry master's degree program.
3. Doctor of Philosophy (Ph.D.) offered through the Virginia Consortium Program in Clinical Psychology, sponsored by Eastern Virginia Medical School, Norfolk State University, and Old Dominion University.
4. Ecological sciences. Optional dual degree program with master's degree in computational and applied mathematics with emphasis in statistics. Training opportunities are available with faculty in the Departments of Biological Sciences, Chemistry and Biochemistry, and Ocean, Earth and Atmospheric Sciences.
5. Applied experimental, human factors, or industrial/organizational psychology.
6. Computational and applied mathematics, with emphases in applied mathematics and statistics/biostatistics.
7. Computational and applied mathematics, with emphases in applied mathematics, statistics and biostatistics.
8. Offered jointly with the College of Engineering and Technology.
9. Offered jointly with the Strome College of Business.
10. Emphasis area within chemistry Ph.D. program.

## Old Dominion University/Eastern Virginia Medical School Joint Program in Medicine

The joint program in medicine is designed to encourage highly qualified students to receive a B.S. from Old Dominion University and an M.D. from Eastern Virginia Medical School. Students apply after completion of their freshman year at Old Dominion University. Upon successful completion of requirements and graduation from Old Dominion University, a student accepted in the ODU/EVMS Joint Program in Medicine will be guaranteed admission to Eastern Virginia Medical School.

### Eligibility and Selection of Students for the Program

1. Applications will be accepted from students without regard to state of residency.
2. Students apply for the program at the beginning of their sophomore year at Old Dominion. A joint committee of ODU/EVMS faculty reviews and selects applicants for this program with approval by the Committee on Admissions at EVMS. EVMS accepts only U.S. citizens and Permanent Residents in their medical program.
3. Criteria for the program include a combined Math and Verbal Scholastic Aptitude Test minimum score of 1250 and an overall high school grade point average of at least 3.40. Students are expected to complete one year of general chemistry and the first semester of organic chemistry by the end of the first semester of their sophomore year. Students who do not meet these minimum requirements will not be considered for the program.
4. Sophomores at Old Dominion will apply through the Prehealth Advisory Committee, room 236 in the Mills Godwin building. Applications will be received and reviewed by that committee. Based upon academic records, including high school performance and SAT scores, and non-academic factors such as volunteerism, leadership, and health care exposure, students will be nominated for the program.

5. Qualified applicants will be interviewed by members of a joint Old Dominion University/Eastern Virginia Medical School faculty committee.
6. To guarantee their positions at Eastern Virginia Medical School, students in this program should maintain an overall and science grade point average of 3.25. Also, a student in this program must receive satisfactory annual reviews from a faculty committee at Old Dominion University. A student will be dropped from the program if found guilty of violating the Honor Code, or if the recommendations of the major advisor and joint committee were not followed. A joint committee of faculty members from Old Dominion University and Eastern Virginia Medical School will annually review the continued eligibility of students in the program.
7. Students in this program must still take the courses required by Eastern Virginia Medical School, i.e. one year of biology, two years of chemistry (including organic chemistry), and one year of physics, and obtain grades of B or better. These courses must be completed at Old Dominion University; all requests to transfer the prerequisite courses from another institution must be approved by the Prehealth Advisory Committee. The Old Dominion University faculty will determine which are the appropriate courses to meet these requirements.
8. Questions about the joint program in medicine should be directed to Kim Herbert, Director of Advising, College of Sciences, (757) 683-6790.

### Other Advantages of the Program

Because students enrolled in this program will be assured of a position at Eastern Virginia Medical School, they will be encouraged to take courses that meet their interest and needs, rather than courses perceived as necessary to gain entrance into medical school.

Students in this program will be expected to complete the requirements for a baccalaureate degree before beginning medical school.

### Policy for the Awarding of Bachelor's Degrees To Students Attending Professional School in Medically Related Fields

Old Dominion University students attending an accredited medical, dental, pharmacy, or veterinary school without a bachelor's degree shall be given the opportunity of receiving the bachelor's degree in accordance with the prescribed criteria as follows:

1. The student applying for the degree must complete a minimum of 90 semester hours of undergraduate credit prior to attending professional school.
2. The student must fulfill the General Education requirements of the University and the College of Sciences.
3. Thirty of the last thirty-six hours prior to professional school must be taken at Old Dominion University. A minimum of 12 hours at the 300/400 level in the major program must be taken at Old Dominion University.
4. This policy is applicable to any bachelor's degree offered by Old Dominion University. It must be kept in mind, however, that all departmental requirements must be met either prior to professional school or by using courses taken during the first year of professional school. This latter course of action requires written petition to and approval by the appropriate departmental chair. In either case the student must complete at least two-thirds of the major requirements for the degree prior to attending professional school.
5. The degree is to be awarded only after completion of one year of professional school with acceptable academic performance (to be determined by a letter from the professional school stating that the student is eligible to matriculate for the second year).
6. The student would apply for the bachelor's degree on completion of one year of professional school. Certification by the appropriate department chair is required as usual.

### Preparation for Pharmacy School

The following courses are recommended for students who wish to complete their pharmacy prerequisites in two years. These courses are particularly designed to meet requirements at the School of Pharmacy of Virginia Commonwealth University, which will accept only students who present at least 65 hours of credit. Students should consult schools of their interest regarding entrance requirements. Recommended courses are:

BIOL 121N	General Biology I	3
BIOL 122N	General Biology I Lab	1
BIOL 123N	General Biology II	3
BIOL 124N	General Biology II Lab	1
CHEM 121N & CHEM 122N & CHEM 123N & CHEM 124N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory and Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	8
CHEM 211 & CHEM 213	Organic Chemistry Lecture and Organic Chemistry Lecture	6
CHEM 212 & CHEM 214	Organic Chemistry Laboratory and Organic Chemistry Laboratory	4
ENGL 110C	English Composition	3
Three additional hours in English		3
MATH 162M	Precalculus I	3
MATH 163	Precalculus II	3
MATH 211	Calculus I	4
PHYS 111N	Introductory General Physics	4
PHYS 112N	Introductory General Physics	4
COMM 101R	Public Speaking	3
PHIL 345E	Bioethics	3
Electives (liberal arts and behavioral sciences)		18
Total Hours		74

Contact the Advising Office, College of Sciences, 757-683-6790 for questions concerning preparation for Pharmacy School.

### Prehealth Advisement–Prehealth Advisory Committee

Students seeking careers in medicine, dentistry, osteopathy, optometry, podiatry or veterinary medicine should request advisement as early as possible from the College of Sciences prehealth advisory committee, as well as from their major or other academic advisor. This is to obtain general information of value in gaining acceptance to the professional school of choice, such as how and when to apply for admission, preparation for preprofessional tests and interviews, obtaining letters of evaluation and recommendation, and choosing among the many different schools and professions. Advice is also given on course selection, although only the academic advisor can formally approve these selections.

Students seeking admission to medical, dental and other medically related professional schools should confer with the Prehealth Advisory Committee in their junior year concerning the preparation of letters of evaluation by the Committee.

The chair of the Prehealth Advisory Committee is Terri Mathews, Associate Dean, College of Sciences. To receive prehealth advisement, please contact Kim Herbert, Associate Chair of the Prehealth Advisory Committee located in MGB 236, (757) 683-6790.

### B.S./M.B.A. Five-Year Program

The accelerated B.S./M.B.A. program is designed for well qualified non-business undergraduate ODU students to start their M.B.A. program prior to completing their undergraduate degree. Qualified non-business undergraduate students will be able to start taking M.B.A.-level courses as early as the second semester of their junior year. This will enable them to complete their undergraduate and M.B.A. degrees in approximately five-



and-a-half years. Students interested in pursuing the accelerated program should carefully plan their undergraduate course of study considering the requirements of the program, as explained below.

## Admission Requirements

A potential candidate will have:

1. Achieved a minimum Graduate Management Admission Test (GMAT) score of 550
2. Completed all lower level general education requirements
3. Completed at least 24 credit hours at ODU with a GPA of at least 3.0
4. A minimum index of 1200 (index is computed as 200 times the ODU GPA plus GMAT score)

## Admissions Procedure

Students interested in the accelerated program should plan to take the GMAT at least two semesters prior to the semester in which they plan to enroll. Applications should be submitted to the M.B.A. Program Office at the beginning of one full semester (fall, spring) prior to planned enrollment.

Students interested in the program should discuss their plans with the M.B.A. program manager as early as possible. The M.B.A. program manager will act as their advisor. The M.B.A. Program Office is located in 1026 Constant Hall. The phone number is 683-3585.

## M.B.A Core Courses

Admitted students may begin to complete courses from the M.B.A. pre-core and core starting in the second semester of their junior year. The credit hours will count toward the undergraduate degree and will meet upper-level General Education requirements. Students must maintain a 3.0 grade point average in these courses to continue in the program.

### MBA Pre-Core

MBA 600	Introduction to Statistics	1
MBA 601	Introduction to Managerial Economics	1
MBA 602	Introduction to Finance	1
MBA 603	Introduction to Accounting	1
MBA 604	Introduction to Information Management	1

### MBA Core

ACCT 611	Financial Accounting	2
ECON 607	Managerial Economics	2
FIN 613	Financial Management	2
IT 614	Information and Knowledge Management	2
MGMT 612	Organizational Behavior	2
MKTG 608	Fundamentals of Contemporary Marketing	2
OPMT 615	Operations & Supply Chain Management	2

## Requirements for the M.B.A.

The entire program for a general M.B.A. is 45 credit hours for non-business majors. All courses will be available online and on main campus except for the pre-core, which is only offered online.

Students have to satisfactorily complete:

1. The five hour pre-core
2. Undergraduate requirements and the 16 M.B.A. core courses (32 credit hours). The 16 M.B.A. core courses includes the seven M.B.A. core courses that meet upper-division General Education requirements in the undergraduate degree and the following nine M.B.A. core courses:

### MBA Core

ACCT 609	Managerial Accounting	2
BNAL 606	Statistics for Managers	2
BNAL 610	Fundamentals of Business Analytics	2
ECON 618	Global Macroeconomics	2

FIN 616	Investments and Portfolio Management	2
FIN 619	Business Law and Ethics	2
INBU 620	International Business Issues	2
MGMT 605	Essentials of Leadership	2
MKTG 617	Marketing Strategy	2
Total Hours		18

3. MGMT 621

4. Minimum of four hours of electives. Students may complete this requirement with any combination of 1, 2 or 3 credit hour classes to meet the minimum four- credit requirement. Students may choose to add an additional credential with a choice of a Graduate Certificate or related business degrees. Much of the coursework from the additional credentials can meet the elective requirements of the M.B.A. program as well as the program requirements of the selected certificate or degree program.

## Research and Service Centers

### Center for Computational Science

The center provides a focus for the University's efforts to perform scientific investigation through large-scale computer models of natural phenomena. It complements the Virginia Modeling, Analysis and Simulation Center, which focuses primarily on the simulation of human-engineered systems, though some underlying methodologies overlap. With close ties to the Department of Energy and NASA laboratories and support from these agencies and NSF, center personnel perform computationally intensive research, develop algorithms and software for high-end parallel computers, train computationally oriented graduate students and post-docs, and disseminate the products of their research, directed scientific results and software libraries, within and beyond the University.

### Center for Molecular Medicine

The Center for Molecular Medicine (CMM) provides a focal point for research in molecular biology, immunology and mammalian molecular genetics supported by peer-reviewed research grants primarily from the National Institutes of Health (NIH) and other sources. Additional areas of research include bioinformatics, systems biology and computational/mathematical biology.

### Commonwealth Center for Coastal Physical Oceanography

The Commonwealth Center for Coastal Physical Oceanography focuses research efforts on major physical processes in the coastal ocean. These processes include continent scale currents, exchange with the open ocean, and effects of global change. Techniques focus on computer modeling and analysis of existing data bases. The center provides advanced computer resources, technical support, and funding for faculty, research associates, and students. Visitors are encouraged to use the facility during either short- or long-term stays.

### Center for Accelerator Science

The Center for Accelerator Science, established in partnership with Thomas Jefferson National Accelerator Facility (Jefferson Lab), aims to meet the nation's need for scientists who will advance the sciences and technologies of particle accelerators and light sources for use in basic science, applied science and industry.

## Biological Sciences

Wayne Hynes, Chair

The Department of Biological Sciences offers a broad selection of course offerings. The undergraduate curriculum is based on a two-semester foundations course and five core courses that provide a well-rounded introduction to the major subdisciplines of biology. The elective courses allow students to explore multiple facets of the biological sciences or to deepen their understanding of a single subdiscipline.

Many of our students tailor their undergraduate degrees for entry into professional and graduate schools. The department has an excellent program in secondary science education for those desiring to teach, an outstanding pre-health track for students interested in the medical professions, and the combination of academic and research opportunities necessary to best prepare students for research-based graduate studies.

## Bachelor of Science—Biology Major

Written Communication *		6
ENGL 110C	English Composition (required)	
ENGL 231C	Introduction to Technical Writing (required)	
Oral Communication		3
COMM 101R	Public Speaking	
or COMM 103R	Voice and Diction	
or COMM 112R	Introduction to Interpersonal Communication	
Mathematics		3
MATH 162M	Precalculus I (required)	
Language and Culture		0-6
Information Literacy & Research		3
CS 121G	Introduction to Information Literacy and Research for Scientists (required)	
Human Creativity		3
Interpreting the Past		3
Literature		3
Philosophy and Ethics		3
The Nature of Science (select one of the following)		8
PHYS 111N & PHYS 112N	Introductory General Physics and Introductory General Physics	
OEAS 110N & OEAS 112N	Earth Science and Historical Geology	
OEAS 111N & OEAS 112N	Physical Geology and Historical Geology	
Impact of Technology		3
Human Behavior		3
<b>Departmental Requirements **</b>		
BIOL 121N & BIOL 122N	General Biology I and General Biology I Lab	4
BIOL 123N & BIOL 124N	General Biology II and General Biology II Lab	4
Total Hours		49-55

\* Grade of C or better required in both courses

\*\* Must be passed with a C (2.0) or better to continue in the program.

Upon completion of BIOL 121N, BIOL 122N/BIOL 123N, BIOL 124N students must complete the following core of biology courses, some of which are prerequisites\*\* or corequisites\*\*\* for upper-level biology courses (see course descriptions for prerequisites to individual courses).

BIOL 293	Cell Biology <sup>+</sup>	3
BIOL 303	Genetics <sup>+</sup>	3
STAT 130M	Elementary Statistics <sup>++</sup>	3
BIOL 405W	Biology Seminar <sup>+++</sup>	3

\*\* Prerequisite – designated course must be completed before enrolling in the course requiring the prerequisite.

\*\*\* Corequisite – designated course may have been completed or taken during the same semester the student is enrolling in the course requiring the corequisite.

<sup>+</sup> Have (Precalculus) and (Organic Chemistry) as pre- or corequisites.

<sup>++</sup> Prerequisite for BIOL 303.

<sup>+++</sup> Should be taken during the junior or senior year after completion of its prerequisites.

Core courses must be passed with a C (2.0 or better).

BIOL 291	Ecology	3
BIOL 292	Evolution	3
BIOL 293	Cell Biology	3
BIOL 303	Genetics	3
BIOL 405W	Biology Seminar	3
Total Hours		15

**Biology Electives.** Students must choose 16 elective hours at the 300 level or above from the courses offered by the Department of Biological Sciences. A minimum of three of the courses must have a structured laboratory/field component [BIOL 368 (Internship) and BIOL 369 (Practicum) courses cannot be used to satisfy this requirement]. Students may use four credits at the 200 level to satisfy the elective requirement and may use no more than six credits of unstructured courses to satisfy the requirement (see below). Elective courses must be passed with a grade of C (2.0) or better unless they are specified as Pass/Fail courses, in which case they must be passed (P).

**Unstructured Courses.** Students may take advantage of several non-classroom experiences ("Unstructured Courses") offered by the Department of Biological Sciences and may receive elective credit for these experiences. These include BIOL 368 (Internship), BIOL 369 (Practicum), BIOL 497 (Undergraduate Research) and BIOL 498 (Independent Study). See individual course descriptions and the chief departmental advisor for more information about these opportunities.

Non-biology degree requirements:

CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	4
CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	4
CHEM 211	Organic Chemistry Lecture	3
CHEM elective 200-level or higher		5
MATH 200	Calculus for Business and Economics	3
STAT 130M	Elementary Statistics	3
Total Hours		22

### Elective Credit

Elective credit will be needed to meet the minimum requirement of 120 credit hours for the degree.

### Upper Division General Education

The Professional Education core satisfies this requirement for the secondary education concentration.

- Option A. Approved Disciplinary Minor (a minimum of 12 hours determined by the department), or second degree or second major.
- Option B: Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Sciences and not required by the major (6 hours)

Requirements for graduation (non-teacher education tracks) include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, completion of Senior Assessment, and completion of the Biology Department Senior Assessment when offered.

## Marine Biology Concentration

The marine biology concentration provides students with coursework, specialized advising, and practical experience in marine biology while ensuring a strong, balanced education in one of the traditional natural sciences in which students major. The concentration requires satisfactory completion of the general biology foundation courses (BIOL 121N, BIOL 122N and BIOL 123N, BIOL 124N) or equivalent and at least 15 semester credit hours in approved marine biology related courses at the advanced level (300 and 400 level, see marine biology concentration brochure), including two required courses: Marine Biology (BIOL 331) and Ocean, Earth and Atmospheric Sciences (OEAS 306). The mathematics requirement for the concentration is MATH 211 Calculus I, and the non-biology physical science requirements are OEAS 111N Physical Geology and PHYS 111N Introductory General Physics. Students in the program are expected to participate in non-credit, monthly meetings of the ODU Marine Biology Association. One course completed at an off-campus marine biology laboratory or study abroad program is strongly recommended, as is a research, practicum, or internship experience in marine biology. Other requirements are listed under the Bachelor of Science—Biology Major. Marine biology students may also select a minor in ocean and earth science.

A variety of facilities are available to students interested in the marine biology concentration. On-campus facilities include a modern marine wet laboratory along with biology faculty research laboratories specializing in marine: benthic ecology, animal biomechanics and physiology, marine fish biology and systematics, conservation biology, phytoplankton biology, coastal wetland plants, disease ecology, microbiology, and tropical ecology. Field studies and course-related trips to nearby marine habitats in the Chesapeake Bay and Atlantic Ocean are supported by departmental field vehicles and small vessels, as well as by the Ocean, Earth and Atmospheric Sciences Department's 55-foot research vessel, the R/V Fay Slover. Research requiring SCUBA is supported by the ODU Academic Diving Program, a local chapter of the American Academy of Underwater Scientists. Off-campus access to marine laboratories on Virginia's Eastern Shore and the Florida Keys are available through collaborative agreements with other colleges and universities.

## Bachelor of Science—Biology Major Secondary Education Concentration

This program leads to eligibility for teacher licensure in Virginia and is available only to individuals holding a baccalaureate degree or completing requirements for a Bachelor of Science degree in biology.

### Biology Major with Teaching Licensure in Biology

Students pursuing a biology major with teaching licensure complete the following biology core sequence and 16 credit hours of electives at the 300-level or above, to include three lab courses. Students may use four credits at the 200-level to meet their upper-division requirement.

BIOL 121N & BIOL 122N	General Biology I and General Biology I Lab	4
BIOL 123N & BIOL 124N	General Biology II and General Biology II Lab	4
BIOL 291	Ecology	3
BIOL 292	Evolution	3
BIOL 293	Cell Biology	3
BIOL 303	Genetics	3
BIOL 405W	Biology Seminar	3
Total Hours		23

Electives must include one approved course each in botany, zoology, microbiology, and human anatomy and physiology (see chief departmental advisor for details).

Non-biology requirements are:

CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	4
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CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	4
CHEM 211	Organic Chemistry Lecture	3
CHEM 212	Organic Chemistry Laboratory	2
OEAS 110N or OEAS 111N	Earth Science Physical Geology	4
PHYS 111N	Introductory General Physics	4
MATH 200	Calculus for Business and Economics	3
STAT 130M	Elementary Statistics	3
Total Hours		27

## Admission

Students must first declare the biology teacher preparation track as their major with the biology departmental advisor. All students must apply for and be admitted into the approved biology teacher preparation program. Students must meet the required criteria for admission by passing the Virginia Board of Education prescribed assessments and earn the minimum required grade point averages (GPA).

## Virginia Board of Education prescribed assessments

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program. This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

1. Passing PRAXIS I composite score of 532 by December 31, 2013; **or**
2. Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014:  
Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; **or**
3. Approved substitute test scores:
  - a. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  - b. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
  - c. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
  - d. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
  - e. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
  - f. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
  - g. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
  - h. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
  - i. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**
  - j. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.

*Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

## Required grade point averages (GPA)

- A cumulative GPA of 2.75 is required.
- A major/content GPA of 2.75 is required - all biology courses must be passed with a grade of C (2.0) or above and all other science content courses must be passed with a grade of C- or higher.
- A professional education GPA of 2.75 is required – all professional education courses must be passed with a grade of C- or higher

Although students may enroll in a limited number of education courses, students must be admitted into the approved biology teacher preparation program prior to enrolling in any instructional strategies practicum education course. Students must also meet with an education advisor in the Office of Teacher Education Services.

## Continuance

Students must maintain a cumulative GPA of 2.75, a major/content GPA of 2.75 and a professional education GPA of 2.75. Biology courses must be passed with a grade of C (2.0) or higher. The remaining courses required for the major and in the professional education core must be completed with a grade of C- or higher for continuance. A professional education GPA of 2.75 is required for continuance. Students must take and pass the Virginia Communication and Literacy Assessment (VCLA) and the PRAXIS II Biology Content examination prior to or while enrolled in the instructional strategies course. All assessments must be passed prior to the start of the Teacher Candidate Internship Orientation session.

## Virginia Board of Education prescribed assessments

Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment

PRAXIS II Biology: Content Knowledge (test code: 0235 or 5235) – passing score of 155 is required

To review more information on the Virginia Board of Education prescribed assessments visit the Teacher Education Services website, [www.odu.edu/tes](http://www.odu.edu/tes).

## Graduation

Requirements for graduation include completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, completion of the Biology and Senior Assessments, a minimum cumulative 2.75 GPA, in the major area, and in the professional education core, with no grade less than a C in the major and C- in the professional education core; successful completion of the Teacher Candidate Internship and a minimum of 125 credit hours, which must include both a minimum of 32 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University. Note that a C (2.0) must be earned in all biology courses used to satisfy departmental requirements.

### The Professional Education core courses and requirements are as follows:

Achieve overall 2.75 GPA

STEM 101	Step 1 – Inquiry Approaches to Teaching STEM	1
STEM 102	Step 2 - Inquiry Based STEM Lesson Design	1
STEM 201	Knowing and Learning in STEM Education	3
STEM 202	Classroom Interactions in STEM Education	3
STEM 401	Project Based Instruction in STEM Education	3
STEM 402	Perspectives on STEM	3
SCI 468	Research Methods in Math and Sciences	3
STEM 485	Apprentice Teaching	9
Total Hours		26

Due to changing University requirements, national accreditation standards, and the Virginia Board of Education licensure regulations, the teacher preparation programs in the College of Sciences are under constant revision. Any changes resulting from these factors supersede the program

requirements described in this Catalog. Students are encouraged to obtain current program information from their advisors and from the Teacher Education Services website at: [www.odu.edu/tes](http://www.odu.edu/tes).

## Professional Concentration

Biology students seeking careers in medicine, dentistry, osteopathy, optometry or podiatry should request advisement from Dr. Ralph W. Stevens III, the departmental prehealth advisor, who is located in the Department of Biological Sciences.

Science courses required by all of the above professional programs are:

BIOL 121N & BIOL 122N	General Biology I and General Biology I Lab	4
BIOL 123N & BIOL 124N	General Biology II and General Biology II Lab	4
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	4
CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	4
CHEM 211 & CHEM 212 & CHEM 213	Organic Chemistry Lecture and Organic Chemistry Laboratory and Organic Chemistry Lecture	8
PHYS 111N & PHYS 112N or PHYS 231N & PHYS 232N	Introductory General Physics and Introductory General Physics University Physics and University Physics	8
MATH 200	Calculus for Business and Economics	3
Total Hours		35

Students should confer with their advisors to select the most appropriate math courses and additional science courses. The most frequently recommended biology courses are in the areas of human or vertebrate anatomy and physiology and those stressing the molecular and cellular levels of organization. However, students also are encouraged to explore other disciplines while they have the opportunity to develop a broader view of life processes and the human condition.

## Minor in Biology

The minor in biology offers students additional support to their chosen majors, prepares students for post-baccalaureate professional or graduate programs, offers greater job opportunities to graduates, and/or provides recognition of study in this academic area. The minor requires the successful completion of a minimum of 12 credit hours of coursework (a maximum of three credits at the 200-level, selected from the Biology 200-level core courses, and a minimum of nine credits at the 300-400 level). Courses selected at the 300-400 level may not include BIOL 303 or unstructured coursework and may include only one course from the Biology core. For completion of the minor, a student must have a C (2.0) or better in BIOL 121N & BIOL 122N, BIOL 123N & BIOL 124N, and the 200-level course, if any, used to fulfill the requirements of the minor. The student must also have a minimum overall cumulative grade point average of 2.0 in all courses designated for the minor and taken by the student exclusive of 100-level and prerequisite courses and complete a minimum of six hours of upper-level work through courses offered at Old Dominion University.

## Honors Program in Biology

### A. Honors Research

Undergraduates with junior or senior standing and a GPA of 3.00 or better are eligible to participate in Honors Research. After consultation with the program director (Dr. Deborah A. Waller), students select a professor who agrees to oversee the research project. Students then enroll in two 4-credit courses, BIOL 487 and BIOL 488W. The courses may be taken in any sequence: fall-spring, spring-summer, summer-summer, summer-fall. Normally both semesters are required but a student may receive credit for only one semester. The research project, time commitment by the student and the basis for the grade are mutually determined by the student and

professor. Because first-semester research results are often preliminary, the grade for BIOL 487 is based on a review paper and/or research proposal, which provides the student with an overview of the field. The second semester is graded on the final research paper and a seminar presented to the honors committee and interested faculty. Professors should encourage students to publish results and present papers at scientific meetings when appropriate. Students should also be urged to apply for funds from agencies that provide seed money to undergraduates. The program director can provide information on scientific societies that sponsor meetings and/or offer small grants. Successful completion of both courses with a C (2.0) or better will allow the student to use BIOL 488W as a lab course in meeting his/her requirements.

## B. Bachelor's Degree with Honors in Biological Sciences and Honors Designation for Biology courses

Students maintaining an overall GPA of at least 3.25 and of 3.50 in biology can receive a "Bachelor's Degree with Honors in Biological Sciences" subject to satisfaction of the minimum University standards for the Honors degree and completion of one of the following two options:

**Option 1:** Successful completion of two semesters of biological research taken as BIOL 487 / BIOL 488W (Honors Research).

**Option 2:** Successful completion of three upper-division courses in Biological Sciences and achievement of the "Honors" designation in each.

Students petitioning for designation of an upper-division biology course as "Honors" must have a minimum overall GPA of 3.25 and a GPA of at least 3.50 in biology.

To receive the "Honors" designation for a course, students must achieve a final course score of at least 95% or the equivalent of an "A" on the University grade scale.

Faculty are encouraged to assign and work with students on other activities deemed appropriate for an "Honors" course designation and utilize the results of these activities in the assignment of a course grade.

## Advanced Placement

Students may receive advanced placement (AP) credit for BIOL 121N & BIOL 122N or BIOL 123N & BIOL 124N (4 credits) by a score of 3 on the advanced placement examination. Students receiving a score of 4 or 5 will receive credit for both BIOL 121N & BIOL 122N and BIOL 123N & BIOL 124N (8 credits). Official AP score reports should be sent to the Office of Admissions prior to registration for evaluation.

## Chemistry and Biochemistry

To be named, Chair

Pinky McCoy, Chief Departmental Advisor

The Department of Chemistry and Biochemistry offers a program in biochemistry and an American Chemical Society certified program in chemistry, with an optional secondary education emphasis. Chemistry has been called the "central science" because it makes major contributions to agriculture, biology, electronics, engineering, environmental science, medicine, mineralogy and pharmacology. Either undergraduate degree program gives the student the necessary background for continued academic study at the master's and Ph.D. levels, entry into medical, dental, and pharmacy schools, as well as a career in the chemical industry. Students not only gain an excellent education, but also have many research opportunities available to enrich their understanding of real-world problems. Cooperative arrangements exist with the nearby Eastern Virginia Medical School, NASA Langley Research Center and the Thomas Jefferson National Accelerator Facility.

## Bachelor of Science–Chemistry Major

### Lower Division General Education

Written Communication *	6
Oral Communication	3
COMM 101R      Public Speaking	
Mathematics	3
MATH 162M      Precalculus I (required)	
Language and Culture	0-6
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Philosophy and Ethics	3
Literature	3
The Nature of Science	8
PHYS 231N      University Physics & PHYS 232N      and University Physics	
Impact of Technology	3
Human Behavior	3
<b>Total Hours</b>	<b>41-47</b>

\* Grade of C or better required in both courses

In addition to completing the University's lower-division general education requirements and upper-division general education requirements, a chemistry major must complete the following courses.

### Required Chemistry Courses

CHEM 121N	Foundations of Chemistry I Lecture (cannot earn credit for both 121N and 105N)	3
CHEM 122N	Foundations of Chemistry I Laboratory	1
CHEM 123N	Foundations of Chemistry II Lecture	3
CHEM 124N	Foundations of Chemistry II Laboratory	1
OR		
CHEM 137N	Advanced General Chemistry I and II Lecture	
CHEM 138N	Advanced General Chemistry I and II Laboratory	
CHEM 211	Organic Chemistry Lecture	3
CHEM 212	Organic Chemistry Laboratory	2
CHEM 213	Organic Chemistry Lecture	3
CHEM 214	Organic Chemistry Laboratory	2
CHEM 321 & CHEM 322	Analytical Chemistry Lecture and Analytical Chemistry Laboratory	5
CHEM 351	Inorganic Chemistry	3
CHEM 331	Physical Chemistry Lecture I	3
CHEM 332W	Experimental Physical Chemistry I	2
CHEM 333	Physical Chemistry Lecture II	3
CHEM 334W	Experimental Physical Chemistry II	2
CHEM 421 & CHEM 422	Instrumental Analysis Lecture and Instrumental Analysis Laboratory	6
CHEM 441	Biochemistry Lecture	3
CHEM 485	Chemistry and Biochemistry Seminar	1
Select one CHEM Elective from the following:		3
CHEM 415	Intermediate Organic Chemistry	
CHEM 443	Intermediate Biochemistry	
CHEM 449	Environmental Chemistry	
CHEM 451	Advanced Inorganic Chemistry	
CHEM 453	Essentials of Toxicology	
Select one CHEM Elective from the following:		3

CHEM 352	Inorganic Chemistry Laboratory	
CHEM 442W	Biochemistry Laboratory	
CHEM 452	Advanced Inorganic Chemistry Laboratory	
CHEM 497	Independent Study	
CHEM 498	Independent Study	
<b>Other required courses</b>		
MATH 163	Precalculus II	3
MATH 211	Calculus I	4
MATH 212	Calculus II	4
MATH 312	Calculus III	4
<b>Elective Credit</b>		
(as needed to meet 120-credit hour requirement)		
Total Hours		73

Chemistry majors must have a C or better in all courses required for the major, including prerequisite courses, and must complete a minimum of 12 credits in upper-level (300/400) chemistry courses at Old Dominion University. Written permission by the chief departmental advisor or chair is required prior to taking upper-level chemistry courses at other institutions.

### Upper Division General Education

- Option A. Approved Disciplinary Minor (a minimum of 12 hours determined by the department), or second degree or second major.
- Option B: Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Sciences and not required by the major (6 hours)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, a grade of C or better in all courses required for the major, including prerequisite courses, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment. Additional hours may be required to meet the foreign language requirement.

## Bachelor of Science–Biochemistry Major

### Lower Division General Education

Written Communication *		6
Oral Communication		3
COMM 101R	Public Speaking	
Mathematics		3
MATH 162M	Precalculus I (required)	
Language and Culture		0-6
Information Literacy and Research		3
Human Creativity		3
Interpreting the Past		3
Philosophy and Ethics		3
Literature		3
The Nature of Science		8
BIOL 121N	General Biology I	
BIOL 122N	General Biology I Lab	
BIOL 123N	General Biology II	
BIOL 124N	General Biology II Lab	
Impact of Technology		3
Human Behavior		3
Total Hours		41-47

\* Grade of C or better required in both courses

In addition to completing the University's lower-division general education requirements and upper-division general education requirements, a biochemistry major must complete the following courses.

### Required Chemistry Courses

CHEM 121N	Foundations of Chemistry I Lecture	4
& CHEM 122N	and Foundations of Chemistry I Laboratory	
CHEM 123N	Foundations of Chemistry II Lecture	4
& CHEM 124N	and Foundations of Chemistry II Laboratory	
Or		
CHEM 137N	Advanced General Chemistry I and II	
& CHEM 138N	Lecture and Advanced General Chemistry I and II Laboratory	
CHEM 211	Organic Chemistry Lecture	3
CHEM 212	Organic Chemistry Laboratory	2
CHEM 213	Organic Chemistry Lecture	3
CHEM 214	Organic Chemistry Laboratory	2
CHEM 321	Analytical Chemistry Lecture	5
& CHEM 322	and Analytical Chemistry Laboratory	
CHEM 331	Physical Chemistry Lecture I	6
& CHEM 333	and Physical Chemistry Lecture II	
CHEM 441	Biochemistry Lecture	3
CHEM 442W	Biochemistry Laboratory	4
CHEM 443	Intermediate Biochemistry	3
CHEM 485	Chemistry and Biochemistry Seminar	1
<b>Other Required courses</b>		
MATH 163	Precalculus II	3
MATH 211	Calculus I	4
MATH 212	Calculus II	4
MATH 312	Calculus III	4
PHYS 231N	University Physics	8
& PHYS 232N	and University Physics	
BIOL 293	Cell Biology	3
BIOL 303	Genetics	3
<b>Elective Credit</b>		
(as needed to meet 120-credit hour requirement)		
Total Hours		73

Biochemistry majors must have a C or better in all courses required for the major, including prerequisite courses, and must complete a minimum of 12 credits in upper-level (300/400) chemistry courses at Old Dominion University. Written permission by the chief departmental advisor or chair is required prior to taking upper-level chemistry courses at other institutions.

### Upper Division General Education

- Option A. Approved Disciplinary Minor (a minimum of 12 hours determined by the department), or second degree or second major.
- Option B: Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Sciences and not required by the major (6 hours)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, a grade of C or better in all courses required for the major, including prerequisite courses, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better,

and completion of Senior Assessment. Additional hours may be required to meet the foreign language requirement. Biochemistry majors may not use the chemistry minor to fulfill upper-division general education requirements.

## Bachelor of Science—Chemistry Major with Teaching Licensure

This program leads to eligibility for teacher licensure in Virginia and is available only to individuals holding a baccalaureate degree or completing requirements for a Bachelor of Science degree in chemistry. Due to changing University requirements, national accreditation standards, and the Virginia Board of Education licensure regulations, the teacher preparation programs in the College of Sciences are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students are encouraged to obtain current program information from their advisors and the Teacher Education Services website at [www.odu.edu/tes](http://www.odu.edu/tes).

### Admission

Students must first declare the chemistry teacher preparation track as their major with the chemistry departmental advisor. All students must apply for and be admitted into the approved chemistry teacher preparation program. Students must meet the required criteria for admission by passing the Virginia Board of Education prescribed assessments and earn the minimum required grade point averages (GPA).

### Virginia Board of Education prescribed assessments

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program. This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

1. Passing PRAXIS I composite score of 532 by December 31, 2013; **or**
2. Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014:  
Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; **or**
3. Approved substitute test scores:
  - a. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  - b. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
  - c. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
  - d. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
  - e. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
  - f. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
  - g. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
  - h. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
  - i. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**
  - j. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.

*Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

### Required grade point averages (GPA)

- A cumulative GPA of 2.75 is required.
- A major/content GPA of 2.75 is required - all chemistry courses must be passed with a grade of C (2.0) or above and all other science content courses must be passed with a grade of C- or higher.
- A professional education GPA of 2.75 is required – all professional education courses must be passed with a grade of C- or higher.

Although students may enroll in a limited number of education courses, students must be admitted into the approved chemistry teacher preparation program prior to enrolling in any instructional strategies practicum education course. Students must also meet with an education advisor in the Office of Teacher Education Services.

### Continuance

Students must maintain a cumulative GPA of 2.75, a major/content GPA of 2.75 and a professional education GPA of 2.75. Chemistry courses must be passed with a grade of C (2.0) or higher. The remaining courses required for the major and in the professional education core must be completed with a grade of C- or higher for continuance. A professional education GPA of 2.75 is required for continuance. Students must take and pass the Virginia Communication and Literacy Assessment (VCLA) and the PRAXIS II Chemistry Content examination prior to or while enrolled in the instructional strategies course. All assessments must be passed prior to the start of the Teacher Candidate Internship Orientation session.

### Virginia Board of Education prescribed assessments

Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment

PRAXIS II Chemistry: Content Knowledge (test code: 0245 or 5245) – passing score of 153 is required

To review more information on the Virginia Board of Education prescribed assessments visit the Teacher Education Services website, [www.odu.edu/tes](http://www.odu.edu/tes).

### Graduation

Requirements for graduation include completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, completion of the Senior Assessment, a minimum cumulative 2.75 GPA, in the major area, and in the professional education core, with no grade less than a C in the major and C- in the professional education core; successful completion of the Teacher Candidate Internship and a minimum of 134 credit hours, which must include both a minimum of 34 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University. Note that a C (2.0) must be earned in all chemistry courses used to satisfy departmental requirements.

Additional hours may be required to meet the foreign language requirement. The professional education core satisfies the Upper Division General Education requirement.

The curriculum is as follows:

### Lower Division General Education

Written Communication *	6
Oral Communication	3
COMM 101R	Public Speaking
Mathematics	3
MATH 162M	Precalculus I
Language and Culture	0-6
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Philosophy and Ethics	3
Literature	3
The Nature of Science	8

PHYS 231N & PHYS 232N	University Physics and University Physics	
Impact of Technology		3
Human Behavior		3
Total Hours		41-47

\* Grade of C or better required in both courses

In addition to completing the University's lower-division general education requirements and upper-division general education requirements, a chemistry major seeking teacher licensure must complete the following courses.

### Required Chemistry courses

CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	4
CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	4
Or		
CHEM 137N & CHEM 138N	Advanced General Chemistry I and II Lecture and Advanced General Chemistry I and II Laboratory	
CHEM 211	Organic Chemistry Lecture	3
CHEM 212	Organic Chemistry Laboratory	2
CHEM 213	Organic Chemistry Lecture	3
CHEM 214	Organic Chemistry Laboratory	2
CHEM 321 & CHEM 322	Analytical Chemistry Lecture and Analytical Chemistry Laboratory	5
CHEM 351	Inorganic Chemistry	3
CHEM 331	Physical Chemistry Lecture I	3
CHEM 332W	Experimental Physical Chemistry I	2
CHEM 333 & CHEM 334W	Physical Chemistry Lecture II and Experimental Physical Chemistry II	5
CHEM 421 & CHEM 422	Instrumental Analysis Lecture and Instrumental Analysis Laboratory	6
CHEM 441	Biochemistry Lecture	3
CHEM 449	Environmental Chemistry	3
CHEM 485	Chemistry and Biochemistry Seminar	1
Select one CHEM Elective from the following:		
CHEM 352	Inorganic Chemistry Laboratory	
CHEM 442W	Biochemistry Laboratory	
CHEM 452	Advanced Inorganic Chemistry Laboratory	
CHEM 497	Independent Study	
CHEM 498	Independent Study	
<b>Other Required courses</b>		
MATH 163	Precalculus II	3
MATH 211	Calculus I	4
MATH 212	Calculus II	4
MATH 312	Calculus III	4
Total Hours		67

Chemistry majors must have a C or better in all courses required for the major, including prerequisite courses, and must complete a minimum of 12 credits in upper level (300/400) chemistry courses at Old Dominion University. Written permission by the chief departmental advisor or chair is required prior to taking upper level chemistry courses at other institutions.

### The professional education core courses and requirements

STEM 101	Step 1 – Inquiry Approaches to Teaching STEM	1
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STEM 102	Step 2 - Inquiry Based STEM Lesson Design	1
STEM 201	Knowing and Learning in STEM Education	3
STEM 202	Classroom Interactions in STEM Education	3
STEM 401	Project Based Instruction in STEM Education	3
STEM 402	Perspectives on STEM	3
STEM 485	Apprentice Teaching	9
SCI 468	Research Methods in Math and Sciences	3
Total Hours		26

### Preparation for Medically Related Fields

Students seeking careers in pharmacy, medicine, dentistry, or veterinary science are advised to complete a major in a specific discipline. Such students electing either chemistry or biochemistry as their major must meet all of the requirements listed above for the degree of Bachelor of Science with a major in chemistry or biochemistry. In addition, students must complete all of the prerequisite coursework specified for admission into the professional program of their choice. Students should consult the Office of Admissions of such professional programs for specific prerequisite coursework and other entrance requirements. Students are also advised to register with the Prehealth Advisory Committee at Old Dominion University (683-6790).

### Pre-optometry Program

Old Dominion University has an affiliation agreement with the Pennsylvania College of Optometry whereby students may transfer to the latter institution at the end of their third year and/or receive reduced tuition if they are Virginia residents. Students should contact the Office of the Dean, College of Sciences, 757 683-5201 for more information.

### Minor in Chemistry

The chemistry minor consists of 13 credits of which nine credits must be selected from the following:

Select nine credits from the following:		9
CHEM 213	Organic Chemistry Lecture	
CHEM 321	Analytical Chemistry Lecture	
CHEM 333 & CHEM 334W	Physical Chemistry Lecture II and Experimental Physical Chemistry II	
CHEM 351	Inorganic Chemistry	
CHEM 415	Intermediate Organic Chemistry	
CHEM 441	Biochemistry Lecture	
CHEM 443	Intermediate Biochemistry	
CHEM 449	Environmental Chemistry	
CHEM 451	Advanced Inorganic Chemistry	
CHEM 453	Essentials of Toxicology	
Select four credits from the following:		4
CHEM 214	Organic Chemistry Laboratory	
CHEM 322	Analytical Chemistry Laboratory	
CHEM 332W	Experimental Physical Chemistry I	
CHEM 334W	Experimental Physical Chemistry II	
CHEM 352	Inorganic Chemistry Laboratory	
CHEM 442W	Biochemistry Laboratory	
CHEM 452	Advanced Inorganic Chemistry Laboratory	
Total Hours		13

The courses designated for the minor and taken by students must be completed with an overall cumulative grade point average of 2.00 or better. CHEM 121N/CHEM 122N and CHEM 123N/CHEM 124N must be completed as prerequisites for the minor in chemistry and are not included in the calculation of the grade point average for the minor. Additional prerequisite courses may also be required and are not included in the grade point average for the minor. Students electing the minor must complete a minimum of six credit hours in the minor requirement through courses



offered by Old Dominion University. Any substitutions must be approved in writing by the chief departmental advisor.

## Honors in Chemistry

The honors program provides qualified students the opportunity for supervised individual study in their areas of interest. Admission to the program requires a cumulative GPA of 3.25 or higher and a GPA of 3.50 or higher in the major. Students must take two upper-division courses designated by the department to be honors courses. These are termed "Contract Honors Courses." A description of the procedures for these contract courses is found in the Honors College section of this Catalog.

## Advanced Placement

Students who receive a qualifying score on the Advanced Placement of the College Board exam in chemistry may receive credit for introductory chemistry courses. Students who score a 3 on the AP exam may receive 4 credits for either CHEM 105N/CHEM 106N or CHEM 121N/CHEM 122N. The appropriate credit will be determined after consultation with an advisor. Students who receive a score of 4 or 5 on the AP exam will receive 8 credits for CHEM 121N/CHEM 122N - CHEM 123N/CHEM 124N. Credit for CHEM 107N/CHEM 108N is not awarded by the AP exam. Students may also refer to the section of this Catalog on Experiential Learning Options at the Undergraduate Level.

## Computer Science

Desh Ranjan, Chair

Janet Brunelle, Chief Departmental Advisor

The Department of Computer Science (CS) offers programs leading to the Bachelor of Science in Computer Science (BSCS), Master of Science with a major in computer science, and Doctor of Philosophy with a major in computer science. A five-year accelerated option is available that leads to a Bachelor of Science in Computer Science and a Master of Science with a major in computer science. The BSCS courses are offered via traditional live lectures and distance learning options.

At the undergraduate level the Department of Computer Science jointly offers a program with the Department of Electrical and Computer Engineering in the College of Engineering and Technology leading to a Bachelor of Science in Computer Engineering. A five-year accelerated option is available that leads to Bachelor of Science in Computer Science and Master of Business Administration degrees. The CS department also supports the computer technology concentration of the Engineering Technology bachelor's degree and the Modeling, Simulation and Visualization Engineering bachelor's degree.

Computer science traces its foundation to mathematics, logic and engineering. Students in this program are exposed to the broad theoretical and practical basis of computer science in lectures and laboratory experiences. Through laboratories, students are introduced to both the experimental and the design aspects of computer science. Students may choose their electives to obtain an emphasis in databases, networking, web programming, systems programming, game programming, and cyber security.

The CS Department's curriculum applies computer science education to the real world. The Professional Workforce Development courses (CS 410 and CS 411W) expand upon the experimental and design approach of earlier courses by addressing the creativity and productivity required for business and industrial applications today. Faculty and industry representatives provide project concepts and mentor student teams in design and development of usable products.

## Bachelor of Science in Computer Science

### Curriculum Requirement

The Bachelor of Science in Computer Science requires the successful completion of a minimum of 120 semester credit hours of approved course work. At least 30 credit hours overall and 12 credit hours in upper-level courses in the major program must be completed at Old Dominion

University. In order to gain appropriate exposure and competency in basic computer science theory and applications, students must satisfy the General Education requirements and the following departmental requirements.

## Requirements

### Lower-Division General Education

Skills		
Written Communication *		6
ENGL 110C & ENGL 231C	English Composition and Introduction to Technical Writing (preferred)	
Mathematical Skills (satisfied in the major)		
Oral Communication		3
COMM 101R	Public Speaking (preferred)	
Information Literacy and Research		3
CS 121G	Introduction to Information Literacy and Research for Scientists (preferred)	
Language and Culture (competence must be at the 102 level)		0-6
Ways of Knowing		
Human Creativity		3
Literature		3
The Nature of Science **		8
Human Behavior		3
Interpreting the Past		3
Philosophy and Ethics		3
Impact of Technology (satisfied in the major by CS 300T)		
Total Hours		35-41

\* Grade of C or better required in both courses

\*\* Computer Science majors must complete two Nature of Science courses in sequence from the following:

BIOL 121N & BIOL 122N	General Biology I and General Biology I Lab	4
BIOL 123N & BIOL 124N	General Biology II and General Biology II Lab	4
BIOL 136N & BIOL 137N	Honors General Biology I and Honors General Biology I Lab	4
BIOL 138N & BIOL 139N	Honors General Biology II and Honors General Biology II Lab	4
CHEM 105N & CHEM 106N	Introductory Chemistry and Introductory Chemistry Laboratory	4
CHEM 107N & CHEM 108N	Introductory Organic and Biochemistry and Introductory Organic and Biochemistry Laboratory	4
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	4
CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	4
OEAS 106N & OEAS 108N	Introductory Oceanography and Understanding Global Climate Change	8
OEAS 110N	Earth Science	4
or OEAS 111N	Physical Geology	
and		
OEAS 112N	Historical Geology	4
PHYS 101N & PHYS 102N	Conceptual Physics and Conceptual Physics	8
PHYS 111N & PHYS 112N	Introductory General Physics and Introductory General Physics	8
PHYS 231N & PHYS 232N	University Physics and University Physics	8

## Upper Division General Education

- Option A. Approved Disciplinary Minor (a minimum of 12 hours determined by the department), or second degree or second major.
- Option B: Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Sciences and not required by the major (6 hours)

In addition to completing the University's lower-division general education requirements and upper-division general education requirements, a computer science major must complete the following courses.

### Required Computer Science Courses

CS 150	Problem Solving and Programming I	4
CS 170	Introduction to Computer Architecture I	3
CS 250	Problem Solving and Programming II	4
CS 252	Introduction to Unix for Programmers	1
CS 270	Introduction to Computer Architecture II	3
CS 300T	Computers in Society	3
CS 330	Object-Oriented Programming and Design	3
CS 350	Introduction to Software Engineering	3
CS 355	Principles of Programming Languages	3
CS 361	Advanced Data Structures and Algorithms	3
CS 381	Introduction to Discrete Structures	3
CS 390	Introduction to Theoretical Computer Science	3
CS 410	Professional Workforce Development I	3
CS 411W	Professional Workforce Development II	3
CS 417	Computational Methods and Software	3
CS 471	Operating Systems	3
Total Hours		48

### Elective Computer Science Courses

Three additional CS courses (9 credits) at the 300/400 level (excluding CS 333, CS 334 and CS 382).

Computer science majors may select their own electives from the CS offerings or may be guided by the following emphasis areas. Up to six credits of work experience (CS 367 or CS 368) may be used.

#### Database

CS 450	Database Concepts	3
CS 456	Database Administration I	3
CS 457	Database Administration II	3

#### Networking

CS 454	Network Management	3
CS 455	Introduction to Networks and Communications	3
CS 458	Unix System Administration	3
CS 472	Network and Systems Security	3
CS 486	Introduction to Parallel Computing	3
CS 487	Applied Parallel Computing	3

#### Systems Programming

CS 476	Systems Programming	3
CS 454	Network Management	3
CS 488	Principles of Compiler Construction	3

### Web Programming

CS 312	Internet Concepts	3
CS 418	Web Programming	3
CS 431	Web Server Design	3
CS 441	App Development for Smart Devices	3

### Game Programming

CS 480	Introduction to Artificial Intelligence	3
CS 460	Computer Graphics	3
CS 475	Introduction to Computer Simulation	3

### Cyber Security

CS 462	Cybersecurity Fundamentals	3
CS 463	Cryptography for Cybersecurity	3
CS 464	Networked Systems Security	3
CS 465	Information Assurance	3

### Miscellaneous

CS 451	Software Engineering Survey	3
CS 488	Principles of Compiler Construction	3

### Other Required Courses

MATH 211	Calculus I	4
MATH 212	Calculus II	4
MATH 316	Introductory Linear Algebra	3
STAT 330	An Introduction to Probability and Statistics	3
Technical Electives *		6-8
Total Hours		20-22

\* Computer science majors must complete two courses not counted toward another degree requirement. These may be selected from biology, chemistry, ocean, earth and atmospheric sciences, and physics (excluding BIOL 105N-BIOL 106N, BIOL 110N, BIOL 111N, BIOL 112N, BIOL 113N, BIOL 117N, BIOL 118N, and PHYS 103N-PHYS 104N). With the approval of a computer science advisor, other technically oriented courses may be used to meet this requirement.

Computer science majors must earn a grade of C or better in all (non-elective) computer science courses required for the major and in all computer science prerequisite courses. A minimum of 9 credits of upper-level (300/400) computer science elective courses must be completed in addition to the required courses.

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, passage of the Computer Science Exit Exam, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of a Senior Assessment. Additional hours may be required to meet the foreign language requirement.

### Honors Program

Students may obtain a Bachelor of Science in Computer Science with an honors designation through the completion of three junior/senior level computer science courses with honors designation and by achieving a 3.50 in-major GPA.

### Advanced Placement

The Department of Computer Science awards credit for CS 133 to students who achieve a score of 3, 4, or 5 on the AP Computer Science A or AB exams or a 5, 6, or 7 on the IB Computer Science exams.

## Cooperative Education

Computer science majors interested in gaining practical experience and on-the-job training while completing undergraduate degree requirements may find opportunities through participation in the Cooperative Education Program.

Those students usually start in the junior year working with an employer in a field of computer science. Students must apply through the Career Management Center prior to registering for Cooperative Education credit. All work experiences must be approved by Career Management and the academic department concerned.

Undergraduates can earn a maximum of six semester credits through cooperative education that apply toward degree requirements. For further information, see the Career Management section of this Catalog.

## Professional Development Tracks

### Database Administration with Oracle Software

This track was developed in cooperation with Oracle Corporation. It prepares students for roles in modern database environments. Students may achieve Oracle DBA certification upon completion of this track. Key concepts, techniques and skills required for administering a state-of-the-art database platform are developed. The courses in this track include CS 450, CS 456, and CS 457.

### Network Design and Administration

This track is intended for students who wish to establish a career in network design and administration in networker computing environments. Students will get hands-on experience in designing networks by configuring routers and switches and work with LAN and WAN routing protocols. This track includes coverage of the information required to take the CISCO, CCNA and CCNP certification. Courses under this track include CS 454 and CS 455.

### Computer Science Add-on Endorsement for Professional Education Licensure

A person licensed by the Commonwealth of Virginia to teach in secondary schools may add an endorsement for computer science by completing this program. The required courses are:

CS 150	Problem Solving and Programming I	4
CS 170	Introduction to Computer Architecture I	3
CS 250	Problem Solving and Programming II	4
CS 252	Introduction to Unix for Programmers	1
CS 312	Internet Concepts	3
CS 330	Object-Oriented Programming and Design	3
or CS 355	Principles of Programming Languages	
CS 361	Advanced Data Structures and Algorithms	3
CS 381	Introduction to Discrete Structures	3
Total Hours		24

For more information, refer to the Darden College of Education section of this Catalog.

## Bachelor of Science in Computer Engineering

The computer engineering undergraduate degree program is designed to provide both a broad engineering background and comprehensive foundation in the technical principles underlying the computer area. Students develop a background through course work in mathematics, the basic sciences, and general engineering. The technical core consists of courses from electrical and computer engineering to address hardware aspects of computer engineering and course work from computer science to address software aspects. A grade of C or better must be earned in computer science required courses. In addition, course work in General Education perspectives and communication skills is required to assure a well rounded program of study.

Specific degree requirements can be found listed under the Department of Electrical and Computer Engineering.

Due to limited laboratory facilities, admission to the computer engineering program is on a competitive basis. Students should apply to the Department of Electrical and Computer Engineering.

## Bachelor of Science in Engineering Technology with a Concentration in Computer Engineering Technology

The goal of the computer engineering technology program is to prepare students for employment in areas defined by the rapidly expanding opportunities of computer applications. With new hardware and software products being introduced monthly, students who wish to succeed in this field should develop a background in both software and hardware. This program provides such a background by combining a grounding in basic theory with hands-on, application courses selected from the disciplines of Computer Science and Electrical Engineering Technology. The curriculum emphasizes practical design and the utilization of systems and hardware. Areas of concentration include network design and management, modern communication systems, microcomputer systems and applications, and application program development. A grade of C or better must be earned in computer science required courses. Specific degree requirements can be found listed under the Department of Engineering Technology.

## Minor in Computer Science

Students may minor in computer science by taking the following courses:

CS 150	Problem Solving and Programming I	4
CS 250	Problem Solving and Programming II	4
CS 252	Introduction to Unix for Programmers	1
CS 361	Advanced Data Structures and Algorithms	3
or CS 330	Object-Oriented Programming and Design	
Select two CS Electives at the 400-level or from the following:		6
CS 312	Internet Concepts	
CS 330	Object-Oriented Programming and Design	
CS 355	Principles of Programming Languages	
CS 361	Advanced Data Structures and Algorithms	
CS 350	Introduction to Software Engineering	
CS 381	Introduction to Discrete Structures	
CS 390	Introduction to Theoretical Computer Science	
Total Hours		18

A grade of C or better is required in each course. Students must also meet the University's requirements for a minor as described under Requirements for Undergraduate Degrees.

The curriculum for the Bachelor of Science in Engineering Technology with an emphasis in computer engineering technology and the Bachelor of Science in Computer Engineering contain a built-in minor in computer science.

## Minor in Web Programming

Students may minor in Web Programming by taking the following:

CS 312	Internet Concepts	3
CS 330	Object-Oriented Programming and Design *	3
CS 418	Web Programming	3
One three-credit upper-level CS elective		3
Total Hours		12

\* CS 252 and CS 333 are prerequisites and are not included in the calculation of the grade point average for the minor.

A grade of C or better is required in any of these courses if they are used as a prerequisite to any other CS course. Students must also meet the University's requirements for a minor as described under Requirements for Undergraduate Degrees.

## Five-year Bachelor of Science in Computer Science and Master of Business Administration

This program allows students to earn a Bachelor of Science in Computer Science and a Master of Business Administration. After students have satisfactorily completed their undergraduate requirements, they must complete the remaining requirements in the MBA program.

Additional information can be found in the section on B.S./M.B.A. Five-year Program listed at the beginning of the College of Sciences section of this Catalog. Students interested in this program should contact the MBA Program as early as possible. The MBA Program manager will act as an advisor to the student in addition to the Computer Science advisor.

## Accelerated Bachelor of Science in Computer Science and Master of Science in Computer Science

This program allows exceptionally successful students to earn both a bachelor's and master's degree in computer science within five years by allowing them to count up to 12 credits of graduate coursework toward both their undergraduate and master's degrees in computer science.

### Admission

To be admitted to the accelerated program, students must have completed at least 60 undergraduate credit hours with at least 24 credit hours from ODU. Students must have completed CS 361, CS 381, MATH 212 and all prerequisites for those courses. At the time of admission, they must have an overall GPA of 3.00 or better, and an overall GPA of 3.00 or better in CS and MATH courses.

Interested students who meet the admission requirements should apply to the graduate program director, after consulting with the undergraduate chief departmental advisor, as soon as possible upon completing the required courses and 60 credit hours. In consultation with the graduate program director, a student will:

1. Officially declare an undergraduate Computer Science major with the undergraduate chief departmental advisor.
2. Draft a schedule of graduate courses to be taken as an undergraduate to be presented to the undergraduate chief departmental advisor.
3. Apply, during their senior year, to the Office of Graduate Admissions for admission to the master's in computer science program.

Students who have completed at least six hours of graduate courses upon attaining senior standing (completion of 90 credit hours) and who have earned a GPA of 3.00 or better in those courses will not be required to take the Graduate Record Exam (GRE) for admission to the master's program. Otherwise, in keeping with normal admission requirements for the M.S. in computer science, students will take the GRE as an undergraduate and will subsequently be reevaluated for continuation into the master's program.

Once students have been awarded their bachelor's degree and fulfilled all regular admission requirements for the M.S. in computer science, they will be officially admitted into the M.S. program.

### Program Requirements

Students in the program will fulfill all normal admission and curricular requirements for both a Bachelor of Science in Computer Science and an M.S. in computer science with the following exceptions:

1. Students in the program may count up to 12 hours of graduate courses, at the 500 or 600 level, excluding independent study, taken as an undergraduate toward both the bachelor's and master's degrees in computer science.

- a. Students in the program may substitute computer science graduate courses for undergraduate courses according to the following schema. All students must complete an undergraduate writing intensive course in the major. Students may substitute 500- and 600-level courses for the upper-level CS electives in the undergraduate program so long as they have the prerequisites for those courses. 700- or 800-level courses may not be used.
- b. Students will not receive credit for both the 400 and 500 level version of the same course.
- c. Students in the program may make a written petition for other substitutions to the graduate program director, who will consider them in consultation with the chief departmental advisor and the instructor(s) of the courses involved.

### NOTES:

1. In accordance with University policy, up to 21 hours of graduate courses taken as an undergraduate may be counted toward the bachelor's degree in computer science. However, only 12 hours of graduate courses taken as an undergraduate may also be counted toward the M.S. degree in computer science. This will limit students' scheduling flexibility subsequently.
2. Like students in the regular M.S. in computer science program, students in the accelerated B.S.C.S./M.S. computer science degree may count no more than 12 hours at the 500-level toward their M.S. degree. Students are advised against taking all 12 of those 500-level credits as an undergraduate, since doing so will limit their scheduling flexibility subsequently.

## Computing Facilities

The Computer Science Department at Old Dominion University offers a wide array of facilities, resources, and services to faculty, staff, students and guests. Assets are distributed between Dragas Hall and the Engineering and Computational Sciences Building (E&CS). This system architecture enables services to be configured in a redundant/highly-available manner. This stability and resiliency is essential to maintaining a high level of service to over 2,300 users.

The E&CS building is home to the primary data-center and main administrative office. It also houses several of research labs, a multimedia conference room, and the network operations center. Dragas Hall contains several instructional and research labs, the satellite administrative office, secondary conference room, redundant data-center, extended network operations center, and support staff offices.

The department offers a heterogeneous computing environment that primarily consists of Windows and \*nix based workstations and servers. On the Windows domain, users are offered network logons, Exchange email, terminal services via the Virtual Computing Lab (VCLab) where users can have access to software remotely, roaming profiles, MSSQL database access for research, and Hyper-V virtualization for research/faculty projects. For Unix and Linux users, Solaris, Ubuntu and Red Hat Enterprise Linux (RHEL) distributions are supported. The \*nix services include DNS, NIS, Unix mail, access to personal MySQL databases, class and research project Oracle databases, and both Linux and Unix servers for secure shell sessions.

## Mathematics and Statistics

Hideaki Kaneko, Chair

D. Glenn Lasseigne, Chief Departmental Advisor

## Bachelor of Science—Mathematics Major

The Department of Mathematics and Statistics offers a program of study consisting of three optional concentrations, each of which leads to the degree of Bachelor of Science with a major in mathematics. In order to graduate from the program all students must complete the requirements of at least one of these concentrations. The optional concentrations enable students to emphasize studies in Applied Mathematics, Statistics/Biostatistics, or Mathematics for Secondary School Teachers. The concentration for

secondary school teachers is intended for those who wish to pursue a career in teaching mathematics at the high school level and leads to teaching licensure in the Commonwealth of Virginia. The applied mathematics and statistics/biostatistics concentrations are intended for those who wish to pursue graduate work in the mathematical or statistical sciences, or otherwise obtain employment in a mathematics or statistics-related field. Students in these concentrations may also obtain teacher licensure by fulfilling the requirements of the Darden College of Education outlined under the teaching concentration. The requirements of each basic area along with the professional education courses needed for teacher licensure in the Commonwealth of Virginia are listed below.

## Requirements

### Lower Division General Education

Composition *	6
Oral Communication	3
Mathematics	6
MATH 162M   Precalculus I	
MATH 163    Precalculus II	
Language and Culture	0-6
Information Literacy and Research	3
CS 121G      Introduction to Information Literacy and Research for Scientists	
Human Creativity	3
Interpreting the Past	3
Literature	3
Human Behavior	3
Philosophy and Ethics (PHIL 120P recommended)	3
The Nature of Science **	8
Impact of Technology	3
<b>Total Hours</b>	<b>44-50</b>

\* A grade of C or better is required in both courses.

\*\* The eight credit hours of Nature of Science with labs need not be in the same science. However, PHYS 231N-PHYS 232N are recommended for the applied mathematics option; and BIOL 110N/BIOL 111N; BIOL 112N/BIOL 113N; BIOL 117N/BIOL 118N or BIOL 121N/BIOL 122N-BIOL 123N/BIOL 124N are recommended for the statistics/biostatistics option.

### Other Required courses

CS 150            Problem Solving and Programming I	4
<b>Mathematics Core Course Requirements *</b>	
MATH 211        Calculus I	4
MATH 212        Calculus II	4
MATH 307        Ordinary Differential Equations	3
MATH 311W      Abstract Algebra	3
MATH 312        Calculus III	4
MATH 316        Introductory Linear Algebra	3
MATH 317        Calculus IV: Introductory Analysis	3
STAT 310        Introductory Data Analysis **	3
or STAT 431     Theory of Statistics	
STAT 330        An Introduction to Probability and Statistics ***	3
or STAT 331     Theory of Probability	
<b>Total Hours</b>	<b>34</b>

\* A grade of C+ or higher is required in these courses. In addition, a grade of C or higher is required in mathematics and statistics prerequisite courses to advance to the next course.

\*\* Statistics/Biostatistics majors take both.

\*\*\* Statistics/Biostatistics majors take STAT 331.

**All students are required to choose one of the following concentrations:**

### Applied Mathematics

MATH 401        Partial Differential Equations	3
MATH 408        Applied Numerical Methods I	3
MATH 422        Applied Complex Variables	3
MATH 400-level electives:	9
No more than One of the following may be selected:	
MATH 400        History of Mathematics	
MATH 404        Fundamental Concepts of Geometry	
MATH 406        Number Theory and Discrete Mathematics	
<b>Total Hours</b>	<b>18</b>

### Statistics/Biostatistics

STAT 310        Introductory Data Analysis	3
or STAT 431     Theory of Statistics	
STAT 405        Introduction to Data Handling	3
STAT 400-level electives	12
<b>Total Hours</b>	<b>18</b>

### Mathematics for Secondary for Secondary School Teachers

This concentration is for students seeking teaching licensure (see below for additional information).

### Elective Credit

Elective credit may be needed to meet the minimum requirement of 120 credit hours for the applied mathematics and statistics/biostatistics options.

## Math Teaching Licensure

Due to changing University requirements, national accreditation standards, and the Virginia Board of Education licensure regulations, the teacher preparation programs in the College of Sciences are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students are encouraged to obtain current program information from their advisors and the Teacher Education Services website at [www.odu.edu/tes](http://www.odu.edu/tes).

### Admission

Students must first declare the mathematics teacher preparation concentration as their major with the mathematics departmental advisor. All students must apply for and be admitted into the approved mathematics teacher preparation program. Students must meet the required criteria for admission by passing the Virginia Board of Education prescribed assessments and earn the minimum required grade point averages (GPA).

### Virginia Board of Education prescribed assessments:

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program. This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

1. Passing PRAXIS I composite score of 532 by December 31, 2013; **or**
2. Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014:  
Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; **or**
3. Approved substitute test scores:
  - a. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  - b. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**

- c. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
- d. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
- e. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
- f. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
- g. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
- h. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
- i. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**
- j. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.

*Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

### Required grade point averages (GPA)

- A cumulative GPA of 2.75 is required.
- A major/content GPA of 2.75 is required. No grade lower than C+ is accepted for the core math courses. No grade lower than C- is accepted for the remaining math courses.
- A professional education GPA of 2.75 is required. All professional education courses must be passed with a grade of C- or higher.

Although students may enroll in a limited number of education courses, students must be admitted into the approved mathematics teacher preparation program prior to enrolling in any instructional strategies practicum education course. Students must also meet with an education advisor in the Office of Teacher Education Services.

### Continuance

Students must maintain a cumulative GPA of 2.75, a major/content GPA of 2.75 and a professional education GPA of 2.75. Mathematics core courses must be passed with a grade of C+ or higher. The remaining courses required for the major and in the professional education core must be completed with a grade of C- or higher for continuance. A professional education GPA of 2.75 is required for continuance. Students must take and pass the Virginia Communication and Literacy Assessment (VCLA) and the PRAXIS II Math Content examination prior to or while enrolled in the instructional strategies course. All assessments must be passed prior to the start of the Teacher Candidate Internship Orientation session.

### Virginia Board of Education prescribed assessments

Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment

PRAXIS II Mathematics: Content Knowledge (test code: 5161) – passing score of 160 is required

To review more information on the Virginia Board of Education prescribed assessments visit the Teacher Education Services website, [www.odu.edu/tes](http://www.odu.edu/tes).

### Graduation

Requirements for graduation include completion of ENGL 110C and ENGL 211C or 221C or 231C with a grade of C or better, completion of the Senior Assessment, a minimum cumulative 2.75 GPA, in the major area, and in the professional education core, with no grade less than C+ in the math core courses and no grade less than C- in the remaining courses in the major and the professional education core, successful completion of the Apprentice

Teaching, and a minimum of 125 credit hours to include a minimum of 32 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University.

### Course Requirements for the Mathematics for Secondary School Teachers Concentration

MATH 375	Advanced Concepts for Secondary Educators: Function and Modeling	3
MATH 400	History of Mathematics	3
MATH 404	Fundamental Concepts of Geometry	3
MATH 406	Number Theory and Discrete Mathematics	3
MATH 417	Intermediate Real Analysis I	3
or MATH 422	Applied Complex Variables	
MATH 400-level electives		6
Total Hours		21

### Professional Education core courses and requirements

STEM 101	Step 1 – Inquiry Approaches to Teaching STEM	1
STEM 102	Step 2 - Inquiry Based STEM Lesson Design	1
STEM 201	Knowing and Learning in STEM Education	3
STEM 202	Classroom Interactions in STEM Education	3
STEM 401	Project Based Instruction in STEM Education	3
STEM 402	Perspectives on STEM	3
STEM 485	Apprentice Teaching	9
SCI 468	Research Methods in Math and Sciences	3
Total Hours		26

### UPPER DIVISION GENERAL EDUCATION

The professional education core satisfies this requirement.

- Option A. Approved Disciplinary Minor (a minimum of 12 hours determined by the department), or second degree or second major.
- Option B: Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Sciences and not required by the major (6 hours)

Requirements for graduation for the applied mathematics and statistic concentrations include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University\*, completion of ENGL 110C and ENGL 211C or 221C or 231C with a grade of C or better, and completion of the Senior Assessment.

\* The teaching licensure program requires a minimum of 125 credit hours, which must include 32 credit hours from Old Dominion University.

### Practicum

Any student who wishes to receive a practicum or internship experience may do so as an integral part of the degree program. Students in the secondary school teacher track are required to complete both a practicum and a student teaching internship as part of the degree requirements. Otherwise, students may substitute the practicum experience for one of the optional courses listed in the other two concentrations.

### Minor in Mathematics

Students may pursue a minor in mathematics with an emphasis in one of the three following areas: applied mathematics, statistics/biostatistics or actuarial mathematics.

The applied mathematics option consists of the following:

MATH 307	Ordinary Differential Equations	3
MATH 312	Calculus III	4
MATH 317	Calculus IV: Introductory Analysis	3
Select two of the following:		6
MATH 316	Introductory Linear Algebra	
MATH 401	Partial Differential Equations	
MATH 408	Applied Numerical Methods I	
MATH 409	Applied Numerical Methods II	
MATH 417	Intermediate Real Analysis I	
MATH 420	Applied Mathematics I: Biomathematics	
MATH 421	Applied Mathematics II: Mathematical Modeling	
MATH 422	Applied Complex Variables	
MATH 427	Applied Mathematics III: Elasticity	
MATH 428	Applied Mathematics IV: Fluid Mechanics	
MATH 457	Mathematics in Nature	
Or approved topics courses		
Total Hours		16

The statistics/biostatistics option consists of 12 hours of statistics at the 300/400 level, of which at most six hours can be at the 300 level. STAT 306 cannot be applied to this option.

The actuarial mathematics option consists of the following:

MATH 312	Calculus III	4
MATH 316	Introductory Linear Algebra	3
STAT 330	An Introduction to Probability and Statistics	3
or STAT 331	Theory of Probability	
MATH 408	Applied Numerical Methods I	3
or STAT 431	Theory of Statistics	
Total Hours		13

At least nine credit hours in the chosen option must be taken through courses offered by Old Dominion University. Students must have an overall grade point average of at least 2.00 in the courses required for the minor in their chosen option exclusive of 100/200-level courses and prerequisite courses.

## Advanced Placement

Students who have achieved a qualifying score on the Calculus AB or Calculus BC advanced placement examinations receive credit for MATH 211 (and MATH 162M and MATH 163). Credit for MATH 162M and MATH 163 is also given for qualifying scores on the placement tests administered by the University Testing Center. Refer to the Academic Testing and the Experiential Learning Credit Options at the Undergraduate Level sections of this Catalog. Advanced placement credit is not available for MATH 102M.

## Ocean, Earth and Atmospheric Sciences

Rodger Harvey, Chair

John McConaugh, Chief Departmental Advisor

The Department of Ocean, Earth and Atmospheric Sciences offers an undergraduate major in Ocean and Earth science. Undergraduate majors select one of five concentrations (biological oceanography, chemical oceanography, physical oceanography, geology, Earth science education) that lead to the Bachelor of Science in Ocean and Earth science. A minor in Ocean and Earth science is also offered. Two graduate programs are offered: the Master of Science in Ocean and Earth sciences and the Doctor of Philosophy in oceanography.

The Master of Science degree in Ocean and Earth sciences has both thesis and non-thesis options. Areas of emphasis in oceanography are biological oceanography, chemical oceanography, geological oceanography, and physical oceanography. Interdisciplinary studies are encouraged. The curriculum is designed to prepare graduates for professional practice in their area of interest.

The department receives considerable support from the Commonwealth and local philanthropic sources, as well as from private industry and area citizens. Establishment of the Virginia Graduate Marine Science consortium by the General Assembly in 1979 demonstrated the Commonwealth's determination to achieve excellence in marine science. The purpose of the consortium is to advance marine science instruction, research, training, and advisory services and to enhance Virginia's position in seeking funding to carry out these activities. Charter members of the consortium are Old Dominion University, the University of Virginia, Virginia Polytechnic Institute and State University, and the College of William and Mary. The Samuel L. and Fay M. Slover endowment to Old Dominion University in 1986 has significantly accelerated the program of marine studies. In 1991, a Center for Coastal Physical Oceanography (CCPO) was established at Old Dominion University by the Commonwealth of Virginia. The center is a Designated Center for Excellence.

The Department of Ocean, Earth, and Atmospheric Sciences is housed in two buildings. The Oceanography/Physical Sciences Building contains state-of-the-art teaching laboratories, computer facilities, and research laboratories for biological, chemical and geological oceanography. The Center for Coastal Physical Oceanography is located in the Research I building and houses all of the department's physical oceanography laboratories. The department maintains a 55-foot research vessel, the R/V Fay Slover, primarily for estuarine and coastal studies. In addition to the Slover, the department has a number of small boats, suitable for near shore investigations.

## Bachelor of Science—Ocean and Earth Science Major

John McConaugh, Advisor

Students in the Ocean and Earth science program focus on global systems that control environmental conditions on the planet. They also learn to develop solutions to complex environmental problems by working in interdisciplinary teams. All majors in the department complete courses in the basic sciences and mathematics, core courses in Earth systems science, and a capstone field research experience. In addition, students complete a suite of specialty courses according to one of the following concentrations. A minimum grade of C or higher in all major and prerequisite courses is required for graduation.

### Oceanography Concentration

The oceanography concentration is designed for students considering graduate work or employment in the pure and applied fields of oceanography. Students select specialty courses in biological oceanography, chemical oceanography, or physical oceanography. If students select the biological subdiscipline, they are strongly encouraged to minor in biology and select 12 credits from 300/400 level biology courses. If students select the chemical subdiscipline, they are strongly encouraged to minor in chemistry and select the following courses: CHEM 211-213, 212-214, 321 and 322. If students select the physical subdiscipline, they are strongly encouraged to minor in applied mathematics and select the following courses: MATH 312, 316, 317 and 401.

### Geology Concentration

The geology concentration is designed for students with a wide range of professional goals in the sciences, engineering, business, and the arts. Students considering graduate work or employment in pure and applied fields of geology, including environmental geology, geological oceanography, hydrogeology, geophysics, and geochemistry, should build their backgrounds to support certification as a professional geologist (see later information). Students with a strong interest in geological applications of geographic information systems (GIS) and remote sensing tools should

consider the geology concentration with a minor in geography; the certificate program in spatial analysis of coastal environments (see later description) also emphasizes this area of study.

## Earth Science Education Concentration

The Earth science education endorsement concentration is designed for students preparing to teach Earth science in secondary schools. This program meets the requirements for teacher licensure in Virginia as established by the Virginia Board of Education licensure regulations.

## Requirements for all Concentration Areas

### Lower Division General Education

Composition (grade of C or better required in both courses)	6
Oral Communication	
Met in the major by	
OEAS 441 Ocean and Earth Sciences Field Study I or OEAS 444 Communicating Ocean Science to Informal Audiences	
Mathematics	4
MATH 211 Calculus I (required)	
Language and Culture	0-6
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
CHEM 121N Foundations of Chemistry I Lecture & CHEM 122N and Foundations of Chemistry I Laboratory (required)	
CHEM 123N Foundations of Chemistry II Lecture & CHEM 124N and Foundations of Chemistry II Laboratory (required)	
Impact of Technology	3
Human Behavior	3
Total Hours	39-45

Students must select one of the following options:

### Course Requirements – Biological Oceanography Concentration

BIOL 121N	General Biology I	3
BIOL 122N	General Biology I Lab	1
BIOL 123N	General Biology II	3
BIOL 124N	General Biology II Lab	1
OEAS 111N	Physical Geology	4
MATH 212	Calculus II	4
OEAS 306	Oceanography	3
PHYS 231N & PHYS 232N	University Physics and University Physics	8
OEAS 310	Global Earth Systems	3
STAT 310	Introductory Data Analysis	3
OEAS 406	Matlab	1
OEAS 440	Biological Oceanography	4
BIOL 292	Evolution	3
BIOL 415 or OEAS 451	Marine Ecology Data Collection and Analysis in Oceanography	3
CHEM 211	Organic Chemistry Lecture	3
CHEM 212	Organic Chemistry Laboratory	2
CHEM 213	Organic Chemistry Lecture	3
CHEM 441	Biochemistry Lecture	3

Select two of the following electives:		6
OEAS 403W	Aquatic Pollution	
OEAS 404	Environmental Physiology of Marine Animals	
OEAS 410	Chemical Oceanography	
OEAS 412	Global Environmental Change	
OEAS 420	Hydrogeology	
OEAS 441 & OEAS 442W	Ocean and Earth Sciences Field Study I and Ocean and Earth Sciences Field Study II (satisfies oral and upper-division written communication requirement)	6

Total Hours 67

### Course Requirements – Chemical Oceanography Concentration

BIOL 121N	General Biology I	3
BIOL 122N	General Biology I Lab	1
BIOL 123N	General Biology II	3
BIOL 124N	General Biology II Lab	1
OEAS 111N	Physical Geology	4
MATH 212	Calculus II	4
OEAS 306	Oceanography	3
PHYS 231N & PHYS 232N	University Physics and University Physics	8
OEAS 310	Global Earth Systems	3
STAT 310	Introductory Data Analysis	3
OEAS 406	Matlab	1
OEAS 410	Chemical Oceanography	4
CHEM 211 & CHEM 213	Organic Chemistry Lecture and Organic Chemistry Lecture	6
CHEM 331 & CHEM 333	Physical Chemistry Lecture I and Physical Chemistry Lecture II	6
CHEM 332W or CHEM 452	Experimental Physical Chemistry I Advanced Inorganic Chemistry Laboratory	2
CHEM 351	Inorganic Chemistry	3
Select two of the following electives:		6

OEAS 403W	Aquatic Pollution	
OEAS 412	Global Environmental Change	
OEAS 413	Environmental Geochemistry	
OEAS 418	Chemical Limnology	
OEAS 441 & OEAS 442W	Ocean and Earth Sciences Field Study I and Ocean and Earth Sciences Field Study II (satisfies oral and upper-division written communication requirement.)	6

Total Hours 67

### Course Requirements – Physical Oceanography Concentration

BIOL 121N	General Biology I	3
BIOL 122N	General Biology I Lab	1
BIOL 123N	General Biology II	3
BIOL 124N	General Biology II Lab	1
OEAS 111N	Physical Geology	4
MATH 212	Calculus II	4
PHYS 231N & PHYS 232N	University Physics and University Physics	8
OEAS 306	Oceanography	3
STAT 310	Introductory Data Analysis	3
OEAS 310	Global Earth Systems	3
OEAS 405	Physical Oceanography	3



OEAS 406	Matlab	1
OEAS 415	Waves and Tides	3
OEAS 432	Introduction to Thermo- and Fluid Dynamics for Oceanographers	3
OEAS 433	Introduction to Geophysical Fluid Dynamics	3
OEAS 451	Data Collection and Analysis in Oceanography	3
GEOG 402 or GEOG 404	Geographic Information Systems Digital Techniques for Remote Sensing	3
MATH 307 or MATH 280	Ordinary Differential Equations Transfer Credit for Ordinary Differential Equations	3
PHYS 319	Analytical Mechanics	3
STAT 437	Applied Regression Analysis	3
OEAS 441 & OEAS 442W	Ocean and Earth Sciences Field Study I and Ocean and Earth Sciences Field Study II (satisfies oral and upper-division written communication requirement.)	6
Total Hours		67

### Course Requirements – Geology Concentration

BIOL 121N	General Biology I	3
BIOL 122N	General Biology I Lab	1
BIOL 123N	General Biology II	3
BIOL 124N	General Biology II Lab	1
MATH 212	Calculus II	4
OEAS 111N & OEAS 112N	Physical Geology and Historical Geology	8
PHYS 231N & PHYS 232N	University Physics and University Physics	8
OEAS 306	Oceanography	3
STAT 310	Introductory Data Analysis	3
OEAS 310	Global Earth Systems	3
OEAS 313	Mineralogy	3
OEAS 314	Petrology	4
OEAS 344W	Geomorphology	3
OEAS 320	Sedimentology and Stratigraphy	4
OEAS 406	Matlab	1
OEAS 411	Structural Geology	4
OEAS 420 or OEAS 430	Hydrogeology Introduction to Geophysics	3
Select one of the following:		3
OEAS 303	Paleontology	
OEAS 368	Internship in Ocean and Earth Sciences	
OEAS 403W	Aquatic Pollution	
OEAS 408	Introductory Soils	
OEAS 412	Global Environmental Change	
OEAS 413	Environmental Geochemistry	
OEAS 415	Waves and Tides	
OEAS 419	Spatial Analysis of Coastal Environments	
OEAS 420	Hydrogeology	
OEAS 430	Introduction to Geophysics	
OEAS 431	Sedimentary Petrology	
OEAS 446	Quaternary Geology	
OEAS 441 & OEAS 442W	Ocean and Earth Sciences Field Study I and Ocean and Earth Sciences Field Study II (satisfies oral and upper-division written communication requirement.)	6
Total Hours		68

### Elective Credit

Elective credit may be needed to meet the minimum requirement of 120 credit hours.

### Upper Division General Education

Completion of the professional education courses for Earth science majors satisfies this requirement.

- Option A. Approved Disciplinary Minor (a minimum of 12 hours determined by the department), or second degree or second major.
- Option B: Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Sciences and not required by the major (6 hours)

Requirements for graduation in all options listed above except Earth science education include a minimum cumulative grade point average of 2.00 overall and in the major with a grade of C or better in all major and prerequisite courses, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment. Requirements for Earth science are noted under course requirements for Earth science education.

### Earth Science Education Concentration

Due to changing University requirements, national accreditation standards, and the Virginia Board of Education licensure regulations, the teacher preparation programs in the College of Sciences are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students are encouraged to obtain current program information from their advisors and the Teacher Education Services website at [www.odu.edu/tes](http://www.odu.edu/tes).

### Admission

Students must first declare the Ocean and Earth science major, Earth science education concentration with the chief departmental advisor. All students must apply for and be admitted into the approved earth science teacher preparation program. Students must meet the required criteria for admission by passing the Virginia Board of Education prescribed assessments and earn the minimum required grade point averages (GPA).

#### Prescribed Virginia Board of Education Assessment for Admission to an Approved Teacher Education Program

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program. This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

1. Passing PRAXIS I composite score of 532 by December 31, 2013; **or**
2. Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014:  
Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; **or**
3. Approved substitute test scores:
  - a. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**
  - b. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
  - c. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**

- d. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
  - e. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
  - f. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
  - g. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
  - h. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
  - i. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**
  - j. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.
- Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

### Required grade point averages (GPA):

- A cumulative GPA of 2.75 is required.
- A major/content GPA of 2.75 is required - all Ocean, Earth and Atmospheric Sciences courses and all other science and mathematics content courses must be passed with a grade of C (2.0) or higher.
- A professional education GPA of 2.75 is required – all professional education courses must be passed with a grade of C- or higher.

Although students may enroll in a limited number of education courses, students must be admitted into the approved earth science teacher preparation program prior to enrolling in any instructional strategies practicum education course. Students must also meet with an education advisor in the Office of Teacher Education Services.

### Continuance

Students must maintain a cumulative GPA of 2.75, a major/content GPA of 2.75 and a professional education GPA of 2.75. Ocean, Earth and Atmospheric Sciences content courses must be passed with a grade of C (2.0) or higher. Courses in the professional education core must be completed with a grade of C- or higher for continuance. A professional education GPA of 2.75 is required for continuance. Students must take and pass the Virginia Communication and Literacy Assessment (VCLA) and the PRAXIS II Earth Science Content examination prior to or while enrolled in the instructional strategies course. All assessments must be passed prior to the start of the Teacher Candidate Internship Orientation session.

### Virginia Board of Education prescribed assessments:

- Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment
- PRAXIS II Earth Science: Content Knowledge (test code: 0571) – passing score of 156 is required

To review more information on the Virginia Board of Education prescribed assessments visit the Teacher Education Services website, [www.odu.edu/tes](http://www.odu.edu/tes).

### Graduation

Requirements for graduation include completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, completion of the Senior Assessment, a minimum cumulative 2.75 GPA, in the major area, and in the professional education core, with no grade less than a C in the major and C- in the

professional education core; successful completion of the Teacher Candidate Internship and a minimum of 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University. Note that a C (2.0) must be earned in all Ocean, Earth and Atmospheric Sciences courses used to satisfy departmental requirements.

### Course Requirements – Earth Science Education Concentration

BIOL 121N	General Biology I	3
BIOL 122N	General Biology I Lab	1
STAT 310	Introductory Data Analysis	3
PHYS 111N & PHYS 112N	Introductory General Physics and Introductory General Physics	8
OEAS 111N	Physical Geology	4
OEAS 112N	Historical Geology	4
OEAS 306	Oceanography	3
OEAS 310	Global Earth Systems	3
OEAS 303	Paleontology	3
OEAS 313	Mineralogy	3
OEAS 314	Petrology	4
OEAS 344W	Geomorphology	3
OEAS 443	General Meteorology	3
PHYS 408	Astronomy for Teachers	3
OEAS 441 & OEAS 442W	Ocean and Earth Sciences Field Study I and Ocean and Earth Sciences Field Study II (satisfies oral and upper-division written requirement.)	6
or		
OEAS 444 & OEAS 445	Communicating Ocean Science to Informal Audiences and Communicating Ocean Science to Informal Audiences (an alternative to OEAS 441-442W for the Earth science education emphasis; satisfies oral communication requirement)	
Total Hours		54

### The Professional Education core courses and requirements are as follows:

STEM 101	Step 1 – Inquiry Approaches to Teaching STEM	1
STEM 102	Step 2 - Inquiry Based STEM Lesson Design	1
STEM 201	Knowing and Learning in STEM Education	3
STEM 202	Classroom Interactions in STEM Education	3
STEM 401	Project Based Instruction in STEM Education	3
STEM 402	Perspectives on STEM	3
SCI 468	Research Methods in Math and Sciences	3
STEM 485	Apprentice Teaching	9
Total Hours		26

### Practicum Experiences

Students majoring in Ocean and Earth science have the chance to participate in a practicum—a hands-on course-length experience that closely ties their classroom learning with "real life." All students must complete OEAS 441/OEAS 442W, Field Study (or OEAS 444-OEAS 445 for earth science education track students). In addition, Earth science education track students must complete STEM 485, which places them in science classrooms in secondary schools. All students may complete an internship (OEAS 368) with a municipal, state, or federal government agency, a non-governmental organization, or a business. In addition, Honors students may develop a senior research project in OEAS 487.

## Honors Program in Ocean and Earth Science

Students admitted by the faculty to the Ocean and Earth science honors program engage in supervised individual study in areas of their interest. Honors students must complete all courses required by the department with a minimum grade point average of 3.50 and a total of at least three credits in one of the following courses:

OEAS 487	Honors Research in Ocean and Earth Sciences	1-3
OEAS 488	Honors Research in Ocean and Earth Sciences	1-3
OEAS 497	Special Problems and Research	1-3

## Professional Geologist Certification

Ocean and Earth science graduates who work for several years as geologists and then pass a national standardized test can be certified as a Professional Geologist by the Commonwealth of Virginia or other states. The standardized tests commonly cover the following topics (listed in order of emphasis on the test): Research, Field Methods, and Communications; Structural Geology; Hydrogeology; Sedimentology/Stratigraphy; Petrology; Geomorphology; Engineering Geology; Mineralogy; Geophysics; Paleontology; Geochemistry; Mining Geology; and Petroleum Geology.

## Credit by Examination

Students with prior training or experience may receive credit for three hours of OEAS 111N by passing the DANTES Physical Geology exam. Both tests are administered by the Testing Center. Because OEAS 111N is a four credit course students must also complete a physical geology laboratory course (one credit) in order to use this advanced placement credit. Interested students should contact the chief departmental advisor about this course. Students may also refer to the Policy on Experiential Learning Credit Options at the Undergraduate Level found in this Catalog.

## Ocean and Earth Science Minor

Juniors and seniors with declared majors in biology, biochemistry, chemistry, computer science, engineering, mathematics or physics are eligible to enter the minor program in ocean and Earth science. Specific course prerequisites will be strictly enforced and students with majors in other disciplines should consult with the OEAS chief departmental advisor before applying to the program. Applicants must have already declared a major and have a minimum GPA of 2.00. Students wishing to pursue a minor in Ocean and Earth science may elect to emphasize any aspect of biological, chemical, physical or geological science from course offerings available to OEAS majors, and must complete 12 credit hours of OEAS coursework at the 300 and/or 400 level. The following courses do not satisfy the minor requirements: OEAS 302, 402, 426, and 443.

Students must receive a C or better in each course taken for the minor including prerequisites, and a minimum of six credit hours must be completed at Old Dominion University.

## Certificate in Spatial Analysis of Coastal Environments (Undergraduate and Graduate)

The certificate in spatial analysis of coastal environments provides an interdisciplinary program for students wishing to pursue careers in coastal management or research, remote sensing, or geographic information systems (GIS) applications. Rendered upon completion of the requirements, the certificate is an academic affidavit comprised of courses in geography and ocean and earth science and is administered by the two departments. Students must take courses in the areas listed below and complete them with a cumulative GPA of 3.00 or higher and no grade below a C (2.00). The certificate is available to postgraduate professionals who meet the requirements. Students with comparable professional experience may be able to show competence in selected courses through examination.

Students seeking undergraduate certification complete the 400-level courses, and those seeking graduate certification complete the 500-level courses.

### Core Courses

GEOG 404/504	Digital Techniques for Remote Sensing	3
Select one of the following:		3

BIOL 419/519	Wetland Plants	
BIOL 450/550	Principles of Plant Ecology	
OEAS 411/511	Structural Geology	

### Interpretive Analysis Courses

Select two three-credit courses from the following:

GEOG 402/502	Geographic Information Systems	
GEOG 422W/522	Coastal Geography	
GEOG 490/590	Applied Cartography/GIS	
OEAS 495/595	Special Topics	
GEOG 495/595	Topics in Geography	

### Capstone Seminar

GEOG/OEAS 419/519	Spatial Analysis of Coastal Environments	3
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Total Hours 15

## Physics

Charles I. Sukenik, Chair

Charles E. Hyde, Chief Departmental Advisor

Stephen Bueltmann, Associate Departmental Advisor

## Bachelor of Science - Physics Major

The Department of Physics offers a major in physics with five program concentrations leading to the B. S. degree and the B. S. degree with honors.

- **Concentration A** (Research) is designed primarily for students preparing to do graduate study in physics and related fields or for students preparing to work professionally upon completion of the B. S. degree in various technical fields requiring the strongest preparation in physics.
- **Concentration B** (Professional) is designed for students who wish to create a specialized program of study which combines a strong foundation in physics with strong preparation in another field. Such other fields include engineering, medicine, computer science, business, and communications, to name a few.
- **Concentration C** (Education) is designed for students who are preparing to be high school physics teachers. This curriculum provides a solid foundation in both contemporary physics and in education pedagogy.
- **Concentration D** is a five-year, dual degree program in physics and electrical engineering. Students will receive a B.S. and B.S.E.E. upon graduation. Concentration D provides the highest level of preparation for both graduate school and positions in industry.
- **Concentration E** is a five-year Bachelor of Science in physics and Master of Business Administration dual degree program. After students have satisfactorily completed their undergraduate requirements, they complete the remaining requirements in the M.B.A. program.

## Degree Requirements

Are comprised of three components:

1. Lower-level general education requirements.
2. Departmental requirements.
3. Upper-level general education requirements.

Some departmental requirements also satisfy upper- or lower-level general education requirements. Students earning the A.S., A.A., or A.A.&S. (university parallel) degree from a Virginia Community College or Richard Bland College automatically satisfy the lower-level general education requirements. For Concentrations A and B, the upper-level general education

requirement can be satisfied by any University-approved second major, minor, or two upper-division courses (6 credits) from outside the College of Sciences and not required by the major. For Concentration C, the upper-level general education requirement is satisfied by the Secondary Education Endorsement. For Concentration D, the second degree in electrical engineering satisfies the upper-level general education requirement, while for Concentration E, the M.B.A. core curriculum satisfies the upper-level general education requirement.

## Graduation Requirements

All concentrations require completion of a minimum of 120 credit hours (150 credit hours for Concentration D), which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, completion of the Physics Exit Exam with a minimum score of 20<sup>th</sup> percentile, and Senior Assessment. Additional hours may be required to meet the foreign language requirement. All concentrations require a minimum grade of C in PHYS 231N-PHYS 232N. Concentrations A, B, D and E require a minimum cumulative grade point average of 2.00 overall and in the major. Concentration C requires a minimum 2.75 grade point average overall, in the major, and in the professional education core, with no grade less than a C- in the major and professional education core. The professional education core satisfies the upper-level general education requirement.

## Math Minor

Physics majors in Concentrations A or B wishing to complete a minor in applied mathematics can do so with just two additional math courses. The applied mathematics minor consists of:

MATH 307	Ordinary Differential Equations	3
MATH 312	Calculus III	4
MATH 317	Calculus IV: Introductory Analysis	3
Select two of the following:		6
MATH 316	Introductory Linear Algebra	
MATH 401	Partial Differential Equations	
MATH 408	Applied Numerical Methods I	
MATH 409	Applied Numerical Methods II	
MATH 417	Intermediate Real Analysis I	
MATH 420	Applied Mathematics I: Biomathematics	
MATH 421	Applied Mathematics II: Mathematical Modeling	
MATH 422	Applied Complex Variables	
MATH 427	Applied Mathematics III: Elasticity	
MATH 428	Applied Mathematics IV: Fluid Mechanics	
MATH 457	Mathematics in Nature	
Approved topics courses		
Total Hours		16

MATH 285 cannot be substituted for courses required in the minor. At least nine credit hours must be taken through courses offered by Old Dominion University.

## Lower Level General Education Requirements

(Concentrations A, B, C, E; for concentration D refer to the electrical and computer engineering section in the College of Engineering and Technology)

### Skills

Composition (grade of C or better required in both courses)		
ENGL 110C	English Composition	3
ENGL 211C	English Composition	3
or ENGL 231C	Introduction to Technical Writing	
Oral Communication		3
COMM 101R	Public Speaking	

or COMM 103R	Voice and Diction	
or COMM 112R	Introduction to Interpersonal Communication	
Mathematics (Satisfied by major)		
Language and Culture (B.S. students' competence must be at the 102 level. High school credit may satisfy the requirement.)		0-6
Information Literacy and Research		
CS 120G	Introduction to Information Literacy and Research	3
or CS 121G	Introduction to Information Literacy and Research for Scientists	

### Ways of Knowing

Human Creativity		
Select one of the following:		3
ARTH 121A	Introduction to the Visual Arts	
ARTS 122A	Visual Communication	
COMM/THEA 270A	Film Appreciation	
DANC 185A	Dance and Its Audience	
MUSC 264A	Music in History and Culture	
THEA 241A	The Theatre Experience	
Interpreting the Past		
Select one of the following:		3
HIST 100H	Interpreting the World Past Since 1500	
HIST 101H	Interpreting the Asian Past	
HIST 102H	Interpreting the European Past	
HIST 103H	Interpreting the Latin America Past	
HIST 104H	Interpreting the American Past	
HIST 105H	Interpreting the African Past	
Literature		
Select one of the following:		3
ENGL 112L	Introduction to Literature	
ENGL 114L	American Writers, American Experiences	
FLET 100L	Understanding World Literature	
Philosophy and Ethics		
Select one of the following:		3
PHIL 110P	Introduction to Philosophy	
PHIL 120P	Logic and Philosophy	
PHIL 140P	Introduction to Philosophy of Science	
PHIL 230E	Introduction to Ethics	
PHIL 250E	World Religions: Beliefs and Values	
PHIL 303E	Business Ethics	
PHIL 344E	Environmental Ethics	
PHIL 345E	Bioethics	
PHIL 442E	Studies in Applied Ethics	
Nature of Science (satisfied by the major)		
Impact of Technology		
Select one of the following:		3
COMM 372T	Introduction to New Media Technologies	
CS 300T	Computers in Society	
DNTH 440T	Telehealthcare Technology	
EET 370T	Energy and the Environment	
ENGL 307T	Digital Writing	
GEOG 306T	Hazards: Natural and Technological	
HIST 300T	The History of Sex and Sexual and Reproductive Technologies	
HIST 304T	History of Medicine, Disease, and Health Technology	
HIST 314T	Towers, Tanks and Time: Technology on the Eve of WWI	
HIST 388T	Discovering Earth's History	

HIST 389T	Technology and Civilization	
HIST 386T/ SCI 302T	The Evolution of Modern Science	
IT 360T	Principles of Information Technology	
MUSC 335T	Music Production: MIDI I	
PHIL 383T	Technology: Its Nature and Significance	
POLS 350T	Technology and War	
STEM 110T	Technology and Your World	
STEM 370T	Technology and Society	
WMST 390T	Women and Technology Worldwide	
Human Behavior		
Select one of the following:		3
AAST 100S	Introduction to African American Studies	
ANTR 110S	Introduction to Anthropology	
COMM 200S	Introduction to Human Communication	
CRJS 215S	Introduction to Criminology	
ECON 200S	Basic Economics	
ECON 201S	Principles of Macroeconomics	
ECON 202S	Principles of Microeconomics	
ENTR 201S	Introduction to Entrepreneurship	
FIN 210S	Personal Financial Literacy	
GEOG 100S	Cultural Geography	
GEOG 101S	Environmental Geography	
POLS 100S	Introduction to International Politics	
POLS 101S	Introduction to American Politics	
POLS 102S	Introduction to Comparative Government and Politics	
PSYC 201S	Introduction to Psychology	
PSYC 203S	Lifespan Development	
SOC 201S	Introduction to Sociology	
WMST 201S	Introduction to Women's Studies	
Total Hours		30-36

### Departmental Requirements for Research Concentration (A)

MATH 211	Calculus I	4
MATH 212	Calculus II	4
MATH 312	Calculus III	4
or MATH 285	Transfer Credit for Calculus III	
MATH 307	Ordinary Differential Equations	3
or MATH 280	Transfer Credit for Ordinary Differential Equations	
Select one of the following:		3
MATH 316	Introductory Linear Algebra	
MATH 401	Partial Differential Equations	
MATH 421	Applied Mathematics II: Mathematical Modeling	
MATH 422	Applied Complex Variables	
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory *	4
CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory *	4
CS 150	Problem Solving and Programming I	4
PHYS 231N	University Physics	4
PHYS 232N	University Physics	4
PHYS 303	Intermediate Experimental Physics	3
PHYS 319	Analytical Mechanics	3
PHYS 323	Modern Physics	3

PHYS 355	Mathematical Methods of Physics	3
PHYS 413	Methods of Experimental Physics	3
PHYS 420	Introductory Computational Physics	3
PHYS 425	Electromagnetism I	3
PHYS 452	Introduction to Quantum Mechanics	3
PHYS 453	Electromagnetism II	3
PHYS 454	Thermal and Statistical Physics	3
PHYS 456	Intermediate Quantum Mechanics	3
PHYS 499W	Senior Thesis **	3
or PHYS 489W & PHYS 490W	Senior Thesis I and Senior Thesis II	
PHYS 120	Physics in the 21st Century	1
or PHYS 309	Physics on the Back of an Envelope	
Select two of the following: ***		6
PHYS 313	Elements of Astrophysics	
PHYS 350	Light and Lasers	
PHYS 411	Introduction to Atomic Physics	
PHYS 415	Introduction to Nuclear and Particle Physics	
PHYS 416	Introduction to Solid State Physics	
PHYS 417	Introduction to Particle Accelerator Physics	
Total Hours		81

\* CHEM 137N/CHEM 138N may be taken instead of CHEM 121N/CHEM 122N and CHEM 123N/CHEM 124N

\*\* Grade of C or better required in PHYS 499W or both PHYS 489W and PHYS 490W

\*\*\* With at least three credits at the 400-level.

### Departmental Requirements for Professional Concentration (B)

MATH 211	Calculus I	4
MATH 212	Calculus II	4
MATH 312	Calculus III	4
or MATH 285	Transfer Credit for Calculus III	
MATH 307	Ordinary Differential Equations	3
or MATH 280	Transfer Credit for Ordinary Differential Equations	
Select one of the following:		3
MATH 316	Introductory Linear Algebra	
MATH 401	Partial Differential Equations	
MATH 421	Applied Mathematics II: Mathematical Modeling	
MATH 422	Applied Complex Variables	
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory *	4
CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory *	4
CS 150	Problem Solving and Programming I	4
PHYS 231N	University Physics	4
PHYS 232N	University Physics	4
PHYS 323	Modern Physics	3
PHYS 319	Analytical Mechanics	3
PHYS 303	Intermediate Experimental Physics	3
PHYS 355	Mathematical Methods of Physics	3
PHYS 413	Methods of Experimental Physics	3
PHYS 425	Electromagnetism I	3
PHYS 452	Introduction to Quantum Mechanics	3
PHYS 454	Thermal and Statistical Physics	3

Select one of the following:	3	
PHYS 420	Introductory Computational Physics	
PHYS 453	Electromagnetism II	
PHYS 456	Intermediate Quantum Mechanics	
PHYS 499W	Senior Thesis **	3
or PHYS 489W & PHYS 490W	Senior Thesis I and Senior Thesis II	
PHYS 120	Physics in the 21st Century	1
or PHYS 309	Physics on the Back of an Envelope	
Select two of the following: ***	6	
PHYS 311	Color in Nature and Art	
PHYS 313	Elements of Astrophysics	
PHYS 332	Physics of Music and Musical Reproduction	
PHYS 350	Light and Lasers	
PHYS 411	Introduction to Atomic Physics	
PHYS 415	Introduction to Nuclear and Particle Physics	
PHYS 416	Introduction to Solid State Physics	
PHYS 417	Introduction to Particle Accelerator Physics	
Total Hours		75

\* CHEM 137N and CHEM 138N may be used instead of CHEM 121N/CHEM 122N and CHEM 123N/CHEM 124N.

\*\* Grade of C or better required in PHYS 499W or both PHYS 489W and PHYS 490W

\*\*\* With at least three credits at the 400-level.

## Elective Credit

Elective credit may be needed to meet the minimum requirement of 120 credit hours.

## Bachelor of Science - Physics Major with Teacher Education Licensure

Due to changing University requirements, national accreditation standards, and the Virginia Board of Education licensure regulations, the teacher preparation programs in the College of Sciences are under constant revision. Any changes resulting from these factors supersede the program requirements described in this Catalog. Students are encouraged to obtain current program information from their advisors and the Teacher Education Services website at <http://education.odu.edu/tes/>.

## Admission

Students must first declare the physics (Concentration C) teacher preparation concentration as their major with the physics departmental advisor. All students must apply for and be admitted into the approved physics teacher preparation program. Students must meet the required criteria for admission by passing the Virginia Board of Education prescribed assessments and earn the minimum required grade point averages (GPA).

### Virginia Board of Education prescribed assessments:

Old Dominion University students seeking admission to an approved teacher education program must satisfy the Virginia Board of Education Required Assessment for Admission to an Approved Teacher Education Program. This requirement can be satisfied by meeting a passing score in one of the selected criteria below:

1. Passing PRAXIS I composite score of 532 by December 31, 2013; **or**
2. Passing PRAXIS Core Academic Skills Tests beginning January 1, 2014:  
Reading Score of 156, Writing Score of 162, and Mathematics Score of 150; **or**
3. Approved substitute test scores:
  - a. SAT score of 1000 with at least 450 verbal and 510 mathematics taken prior to April 1, 1995; **or**

- b. SAT score of 1100 with at least 530 verbal and 530 mathematics taken after April 1, 1995; **or**
- c. ACT composite score of 21 with ACT mathematics score of at least 21, and ACT English plus Reading score of at least 37, taken prior to April 1, 1995; **or**
- d. ACT composite score of 24 with ACT mathematics score of at least 22, and ACT English plus Reading score of at least 46, taken after April 1, 1995; **or**
- e. PRAXIS I Math test score of 178 by December 31, 2013 and a composite Virginia Communication and Literacy Assessment (hereafter referred to as the VCLA) score of 470; **or**
- f. PRAXIS Core Academic Skills Mathematics test score of 150 beginning January 1, 2014 and a VCLA score of 470; **or**
- g. SAT Mathematics test score of at least 510 taken prior to April 1, 1995 and a VCLA score of 470; **or**
- h. SAT Mathematics test score of at least 530 taken after April 1, 1995 and a composite VCLA score of 470; **or**
- i. ACT Mathematics test score of at least 21 taken prior to April 1, 1995 and a composite VCLA score of 470; **or**
- j. ACT Mathematics test score of at least 22 taken after April 1, 1995 and a composite VCLA score of 470.

*Note: ACT scores taken prior to 1989 are not valid.*

For the most current information on the prescribed Virginia Board of Education admission assessment, visit the Teacher Education Services website, <http://www.odu.edu/tes> and review the *Teacher Education Handbook*.

### Required Grade Point Averages (GPA)

- A cumulative GPA of 2.75 is required.
- A major/content GPA of 2.75 is required - all physics courses and all other science content courses must be passed with a grade of C- or higher.
- A professional education GPA of 2.75 is required – all professional education courses must be passed with a grade of C- or higher.

Although students may enroll in a limited number of education courses, students must be admitted into the approved physics teacher preparation program prior to enrolling in any instructional strategies practicum education course. Students must also meet with an education advisor in the Office of Teacher Education Services.

## Continuance

Students must maintain a cumulative GPA of 2.75, a major/content GPA of 2.75 and a professional education GPA of 2.75. Physics courses must be passed with a grade of C- or higher. The remaining courses required for the major and in the professional education core must be completed with a grade of C- or higher for continuance. A professional education GPA of 2.75 is required for continuance. Students must take and pass the Virginia Communication and Literacy Assessment (VCLA) and the PRAXIS II Physics Content examination prior to or while enrolled in the instructional strategies course. All assessments must be passed prior to the start of the Teacher Candidate Internship Orientation session.

### Virginia Board of Education prescribed assessments

Virginia Communication and Literacy Assessment (VCLA) – a passing composite score of 470 is required on this reading and writing assessment

PRAXIS II Physics: Content Knowledge (test code: 0265 or 5265) – passing score of 147 is required

To review more information on the Virginia Board of Education prescribed assessments visit the Teacher Education Services website, [www.odu.edu/tes](http://www.odu.edu/tes).

## Graduation

Requirements for graduation include completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, completion of the Senior Assessment, completion of the Physics Exit Exam with a minimum score of 20<sup>th</sup>

percentile, a minimum cumulative 2.75 GPA, in the major area, and in the professional education core, with no grade less than a C- in the major and the professional education core; successful completion of the Teacher Candidate Internship and a minimum of 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours in upper-level courses in the major program from Old Dominion University.

The curriculum is as follows:

### Departmental Requirements for Education Concentration (C)

MATH 211	Calculus I	4
MATH 212	Calculus II	4
MATH 307	Ordinary Differential Equations	3
or MATH 280	Transfer Credit for Ordinary Differential Equations	
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory *	4
CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory *	4
CS 150	Problem Solving and Programming I	4
PHYS 103N	Introductory Astronomy	4
PHYS 231N	University Physics	4
PHYS 232N	University Physics	4
PHYS 323	Modern Physics	3
PHYS 319	Analytical Mechanics	3
PHYS 303	Intermediate Experimental Physics	3
PHYS 120	Physics in the 21st Century	1
or PHYS 309	Physics on the Back of an Envelope	
PHYS 355	Mathematical Methods of Physics	3
PHYS 413	Methods of Experimental Physics	3
PHYS 425	Electromagnetism I	3
PHYS 499W	Senior Thesis **	3
or PHYS 489W & PHYS 490W	Senior Thesis I and Senior Thesis II	
Total Hours		57

\* CHEM 137N/CHEM 138N may be taken instead of CHEM 121N/CHEM 122N and CHEM 123N/CHEM 124N

\*\* Grade of C or better required in PHYS 499W or both PHYS 489W and PHYS 490W

### The Professional Education Core Courses and Requirements

STEM 101	Step 1 – Inquiry Approaches to Teaching STEM	1
STEM 102	Step 2 - Inquiry Based STEM Lesson Design	1
STEM 201	Knowing and Learning in STEM Education	3
STEM 202	Classroom Interactions in STEM Education	3
STEM 401	Project Based Instruction in STEM Education	3
STEM 485	Apprentice Teaching	9
STEM 402	Perspectives on STEM	3
SCI 468	Research Methods in Math and Sciences	3
Total Hours		26

## Bachelor of Science - Dual Degree: Bachelor of Science in Physics and Bachelor of Science in Electrical Engineering

### Departmental Requirements for Concentration D (Dual Degree in Physics and Electrical Engineering)

#### Common Course Requirements

Approved Physics Seminar		1
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	4
MATH 211	Calculus I	4
MATH 212	Calculus II	4
MATH 312	Calculus III	4
MATH 307	Ordinary Differential Equations	3
CS 150	Problem Solving and Programming I	4
PHYS 231N	University Physics	4
PHYS 232N	University Physics	4

#### Physics Course Requirements

CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	4
Select one of the following:		3
MATH 316	Introductory Linear Algebra	
MATH 401	Partial Differential Equations	
MATH 421	Applied Mathematics II: Mathematical Modeling	
MATH 422	Applied Complex Variables	
PHYS 323	Modern Physics	3
PHYS 319	Analytical Mechanics	3
PHYS 303	Intermediate Experimental Physics	2-3
or ECE 287	Fundamental Electric Circuit Laboratory	
PHYS 425	Electromagnetism I	3
PHYS 452	Introduction to Quantum Mechanics	3
PHYS 413	Methods of Experimental Physics	3
PHYS 454	Thermal and Statistical Physics	3
PHYS 420	Introductory Computational Physics	3
PHYS 453	Electromagnetism II	3
or ECE 323	Electromagnetics	
PHYS 456	Intermediate Quantum Mechanics	3
PHYS 499W	Senior Thesis *	3
or PHYS 489W & PHYS 490W	Senior Thesis I and Senior Thesis II	

Select one of the following:		3
PHYS 411	Introduction to Atomic Physics	
PHYS 415	Introduction to Nuclear and Particle Physics	
PHYS 416	Introduction to Solid State Physics	
PHYS 417	Introduction to Particle Accelerator Physics	

#### Engineering Course Requirements

ENGN 110	Explore Engineering and Technology	2
ECE 111	Information Literacy and Research for Electrical and Computer Engineering	2
ECE 201	Circuit Analysis I	3
ECE 202	Circuit Analysis II	3
ECE 241	Fundamentals of Computer Engineering	4
ECE 287	Fundamental Electric Circuit Laboratory	2
ECE 302	Linear System Analysis	3
ECE 303	Introduction to Electrical Power	3
ECE 304	Probability, Statistics, and Reliability	3
ECE 313	Electronic Circuits	4

ECE 332	Microelectronic Materials and Processes	3
ECE 381	Introduction to Discrete-time Signal Processing	3
ECE 387	Microelectronics Fabrication Laboratory	3
ECE 485W	Electrical Engineering Design I	3
ECE 486	Preparatory ECE Senior Design II	2
ECE 487	ECE Senior Design II	2
ECE Tech Elective I, II, III		9
Approved Elective		1-3
Total Hours		129-132

\* Grade of C or better required in PHYS 499W or both PHYS 489W and PHYS 490W

## Departmental Requirements for Concentration E (B.S. Physics and M.B.A.)

### Physics Course Requirements

MATH 211	Calculus I	4
MATH 212	Calculus II	4
MATH 312	Calculus III	4
MATH 307	Ordinary Differential Equations	3
Select one of the following:		3
MATH 316	Introductory Linear Algebra	
MATH 401	Partial Differential Equations	
MATH 421	Applied Mathematics II: Mathematical Modeling	
MATH 422	Applied Complex Variables	
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory *	4
CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory *	4
CS 150	Problem Solving and Programming I	4
PHYS 231N	University Physics	4
PHYS 232N	University Physics	4
PHYS 323	Modern Physics	3
PHYS 319	Analytical Mechanics	3
PHYS 303	Intermediate Experimental Physics	3
PHYS 355	Mathematical Methods of Physics	3
PHYS 413	Methods of Experimental Physics	3
PHYS 425	Electromagnetism I	3
PHYS 452	Introduction to Quantum Mechanics	3
PHYS 454	Thermal and Statistical Physics	3
Select one of the following:		3
PHYS 420	Introductory Computational Physics	
PHYS 453	Electromagnetism II	
PHYS 456	Intermediate Quantum Mechanics	
PHYS 499W	Senior Thesis **	3
or PHYS 489W & PHYS 490W	Senior Thesis I and Senior Thesis II	
Approved Physics Seminar		1
Select one of the following:		3
PHYS 311	Color in Nature and Art	
PHYS 313	Elements of Astrophysics	
PHYS 332	Physics of Music and Musical Reproduction	
PHYS 350	Light and Lasers	
PHYS 411	Introduction to Atomic Physics	
PHYS 415	Introduction to Nuclear and Particle Physics	
PHYS 416	Introduction to Solid State Physics	

PHYS 417	Introduction to Particle Accelerator Physics	
Total Hours		72
*	Or CHEM 137N-CHEM 138N	
**	Grade of C or better required in PHYS 499W or both PHYS 489W and PHYS 490W	

## Upper Division General Education

Satisfied by M.B.A. Pre-Core and Core Curriculum: These courses may be taken beginning with the second semester of the junior year. Students must maintain a 3.0 grade point average in these courses to continue in the program.

### MBA Pre-Core

MBA 600	Introduction to Statistics	1
MBA 601	Introduction to Managerial Economics	1
MBA 602	Introduction to Finance	1
MBA 603	Introduction to Accounting	1
MBA 604	Introduction to Information Management	1

### MBA Core

ACCT 611	Financial Accounting	2
ECON 607	Managerial Economics	2
FIN 613	Financial Management	2
IT 614	Information and Knowledge Management	2
MGMT 612	Organizational Behavior	2
MKTG 608	Fundamentals of Contemporary Marketing	2
OPMT 615	Operations & Supply Chain Management	2

## Senior Thesis

An important feature of all concentrations is the Senior Thesis, which is based on individual research done under the supervision of a faculty advisor. The Senior Thesis is a capstone experience that gives a student the opportunity to apply knowledge and skills acquired in the classroom to real-life research problems in physics. This research can be done either in on-campus laboratories and facilities or at other scientific institutions in the region where departmental faculty members perform research, such as the Thomas Jefferson National Accelerator Facility (including the Applied Research Center) or the Langley Research Center of NASA. On completion of the project, the student must prepare a written final report and make an oral presentation of the results to the department. The senior thesis can be completed in one semester, by taking PHYS 499W, or in two semesters, by taking the PHYS 489W & PHYS 490W sequence.

## Minor in Physics

PHYS 231N-PHYS 232N must be completed as prerequisites for the minor in physics and are not included in the calculation of the grade point average for the minor. The minor in physics requires completion of the following, with an overall cumulative grade point average of 2.00 or better in these courses exclusive of 100/200 level courses and prerequisite courses:

PHYS 319	Analytical Mechanics	3
PHYS 323	Modern Physics	3
Two 300 or 400-level PHYS courses		6
Total Hours		12

Students must complete a minimum of six credit hours of 300-level or 400-level PHYS courses in the minor requirement through courses offered by Old Dominion University. Up to three credits can be in Independent Study courses, with approval of the chief departmental advisor. Any substitutions must be approved in writing by the chief departmental advisor.

## B. S. Degree with Honors

Qualified students may receive the B.S. degree with honors (to be noted on their diplomas) by completing specified additional requirements. At the time of application for this designation, a student must have a GPA of 3.50



or higher in physics, a GPA of 3.25 or higher overall, must have completed two contract honors courses, and must have completed 60 credit hours (of which at least 54 must be in grade-point graded courses) at Old Dominion University. (Contract honors courses are specialized courses of individual study under the direct supervision of a professor. Permission to take these courses is granted jointly by the Department of Physics and the Honors College.)

## Advanced Placement

Advanced placement credit for PHYS 111N-112N (four credits each, for a total of eight credits) will be awarded for a score of 4 or 5 on the Physics B examination, advanced placement credit for PHYS 231N (four credits) will be awarded for a score of 4 or 5 on the Physics C (Mechanics) examination, and advanced placement credit for PHYS 232N (four credits) will be awarded for a score of 4 or 5 on the Physics C (Electricity and Magnetism) examination, each administered by the Advanced Placement Program of the College Board.

Advanced placement credit for courses other than PHYS 111N-112N and PHYS 231N-232N may be received on the basis of examinations administered by the Department of Physics. Permission to take such an examination must be obtained from the chief departmental advisor. Students may also refer to the Policy on Experiential Learning Credit Options at the Undergraduate Level found in this Catalog.

## Clifford L. and Lillian R. Adams Scholarship

The Department of Physics selects one or more students each year to receive the Clifford L. and Lillian R. Adams Scholarship. The recipient must be a declared physics major and may be an entering freshman, a transfer student, or a continuing student. Selection is based on a student's academic record, relevant test scores, and recommendations. The award is renewable.

## Psychology

James Bliss, Chair  
Jennifer Younkin, Chief Departmental Advisor

### Bachelor of Science—Psychology Major

A student who intends to major in psychology must attend a Major Declaration Session in the Department of Psychology. Freshmen with 0-25 Earned Hours need to meet with an advisor from the College of Sciences advising team for pre-registration advising for their first academic year. Once students have earned 26 hours with an overall GPA of 2.0 or higher and a psychology GPA of 2.0 or higher, and completed STAT 130M and PSYC 201S, earning a C or better in each, they will need to attend a Major Declaration Session. Following declaration of the major, students are advised by the chief departmental advisor in psychology until they have accumulated 60 credit hours. Once students accumulate 60 credit hours, they select an individual faculty advisor within their interest area of psychology. Students should visit the Undergraduate Program Office (MGB 246) for information about the major and advising schedules. If the office is closed students may refer to the bulletin board across from (MGB 246) or visit the Psychology Department web page at <http://sci.odu.edu/psychology/>.

#### Goals for the Psychology Major

1. Students will be able to define, interpret, and apply major concepts, theories, and findings in psychology.
2. Students will be able to compute, analyze, and interpret quantitative and qualitative psychological data.
3. Students will be able to recognize, analyze, and design experimental and non-experimental research in psychology.
4. Students will be able to interpret and produce scientific writing in psychology using standard APA format.
5. Students will be able to identify, recognize, and apply principles of ethics and respect for individual, social, and cultural differences.

6. Students will be able to apply discipline information to decisions about careers in psychology and related fields.

## Lower Division General Education

Written Communication *	6
Oral Communication	3
Mathematics **	6
Language and Culture	0-6
Information Literacy and Research	3
Human Creativity	3
Interpreting the Past	3
Literature	3
Philosophy and Ethics	3
The Nature of Science	8
Impact of Technology	3
Human Behavior ***	3
<b>Total Hours</b>	<b>44-50</b>

\* A grade of C (2.0) or better is required in all courses meeting the Written Communication requirement.

\*\* STAT 130M or higher and MATH 102M or higher. A grade of C (2.0) or better is required in STAT 130M.

\*\*\* PSYC 201S and PSYC 203S may not be used to satisfy this requirement.

## Departmental Requirements for the Major in Psychology

A grade of C (2.0) or better is required in all psychology courses. Students must achieve an overall grade point average of 2.0, including all psychology courses. No more than six credits in 200-level psychology courses can count toward the major in psychology.

PSYC 201S	Introduction to Psychology	3
PSYC 317	Quantitative Methods	4
PSYC 318W	Research Methods in Psychology	4

### Area I: Foundation Courses

Students must select at least one course from Area I: 3

PSYC 410	Human Cognition	
PSYC 413	Sensation and Perception	
PSYC 414	Principles of Learning	
PSYC 424	Physiological Psychology	
PSYC 430	Animal Behavior	

Students must select at least one course from three of the remaining five areas: 9

### Area II: Developmental

PSYC 321	Psychology of the Exceptional Child	
PSYC 322	The Psychology of Adolescence	
PSYC 334	Social Development	
PSYC 351	Child Psychology	
PSYC 352	Cognitive Development During Childhood	
PSYC 353	The Psychology of Adulthood and Aging	

### Area III: Social/Personality

PSYC 304	Social Psychology	
PSYC 308	Positive Psychology	
PSYC 311	Psychology of Criminal Behavior	
PSYC 363	Psychology of Sex	
PSYC 408	Theories of Personality	

### Area IV: Clinical

PSYC 306	Health Psychology	
PSYC 325	Drugs and Behavior	
PSYC 405	Abnormal Psychology	

PSYC 412	Psychological Tests	
PSYC 461	Drug Abuse and Dependence	
<b>Area V: Cultural Context</b>		
PSYC 323	Psychology of Women	
PSYC 403	History of Psychology	
PSYC 420	Cross-Cultural Psychology	
PSYC 431	Community Psychology	
PSYC 460	Psychology of African Americans	
<b>Area VI: Industrial/Organizational</b>		
PSYC 303	Industrial/Organizational Psychology	
PSYC 343	Personnel Psychology	
PSYC 344	Human Factors	
PSYC 345	Organizational Psychology	
PSYC electives (may include area courses)		15
Total Hours		38

### Elective Credit

General elective credit will be needed to meet the minimum requirement of 120 credit hours. No more than six credits in 200-level psychology courses can count toward the major in psychology.

### Sample Schedules

These schedules are meant as a guide to completing requirements for General Education and the Psychology major in four years or, following completion of an approved associate degree, two years. Students are not required to take courses in these semesters or in this sequence.

Psychology major requirements include:

PSYC 201S	Introduction to Psychology	3
PSYC 317	Quantitative Methods	4
PSYC 318W	Research Methods in Psychology	4
One course from Area 1		3
Three courses selected from Areas 2-6		9
Five additional psychology courses		15

### Four-year program

This sample schedule assumes that the Language and Culture requirements have been met by high school language courses (see Lower-Division General Education Requirements – Language and Culture section of this Catalog). If not, then language credits must be taken as electives.

First Year			
First Term	Hours	Second Term	Hours
PSYC 201S	3	PSYC Course (not 317)	3
STAT 130M	3	COMM 101R or 112R	3
ENGL 110C	3	Written Comm - 200 level	3
Info Lit and Research	3	Ways of Knowing*	6
Ways of Knowing*	3		
MATH 102M	3		
		<b>18</b>	<b>15</b>
Second Year			
First Term	Hours	Second Term	Hours
PSYC 317	4	PSYC 318W	4
PSYC (area 2-6)	3	PSYC (Area 2-6) or Minor**	3

Nat Science Way of Knowing	4	Nat Science Way of Knowing	4
Way of Knowing*	3	Way of Knowing*	6
		<b>14</b>	<b>17</b>

### Third Year

First Term	Hours	Second Term	Hours
PSYC Area 1	3	PSYC (Area 2-6)	3
PSYC (Area 2-6)	6	PSYC courses	6
Minor**	3	Minor**	6
Elective	3		
		<b>15</b>	<b>15</b>

### Fourth Year

First Term	Hours	Second Term	Hours
PSYC course	3	Minor** or Elective	3
Minor**	3	Electives	11
Electives	6		
		<b>12</b>	<b>14</b>

Total credit hours: 120

\* The following Ways of Knowing Areas are required for Lower-Division General Education:

- Human Creativity
- Literature
- Human Behavior
- Interpreting the Past
- Philosophy & Ethics
- Nature of Science
- Impact of Technology

\*\* A minor is recommended but not required.

### Two-year Program

Students arrive with at least 60 credits and a university-approved associate degree indicating all lower-division General Education requirements have been met. Students must also have transfer credit for PSYC 201S, STAT 130M and MATH 102M or higher or complete them at ODU.

Junior			
First Term	Hours	Second Term	Hours
PSYC 317	4	PSYC 318W	4
PSYC (Area 2-6)	6	PSYC Area 1	3
Minor*	3	PSYC course	3
Elective	2	Minor*	6
		<b>15</b>	<b>16</b>
Senior			
First Term	Hours	Second Term	Hours
PSYC (Area 2-6)	3	PSYC courses	6
PSYC Courses	6	Minor* or elective	3
Elective	2	Electives	6
Minor*	3		
		<b>14</b>	<b>15</b>

Total credit hours: 60

\* A minor is recommended but not required.

## Additional Information for Students with Interest in Clinical, Industrial/ Organizational, or Applied Experimental Psychology

### Clinical Psychology

The undergraduate interest area in clinical psychology is designed for students who wish to develop cognitive and behavioral competencies at the bachelor's level of mental health specialization. In addition to the required courses for the psychology major (PSYC 201S, PSYC 317, PSYC 318W, one course from Area I, and one course from three other areas), students are encouraged to include the following in the 38 hours required for a psychology major.

PSYC 369	Practicum in Clinical Psychology	3
PSYC 371	Clinical Supervision in Psychology	1
PSYC 405	Abnormal Psychology	3
PSYC 408	Theories of Personality	3
PSYC 412	Psychological Tests	3
Select one of the following:		3
PSYC 203S	Lifespan Development	
PSYC 304	Social Psychology	
PSYC 321	Psychology of the Exceptional Child	
PSYC 322	The Psychology of Adolescence	

### Industrial/Organizational Psychology

The undergraduate interest area in industrial/organizational psychology is designed for psychology majors who have a special interest in industrial, engineering, and organizational psychology. In addition to the required courses for the major (PSYC 201S, PSYC 317, PSYC 318W, one course from Area I, and one course from three other areas), students are encouraged to include the following in the 38 hours required for a psychology major:

PSYC 303	Industrial/Organizational Psychology	3
PSYC 343	Personnel Psychology	3
PSYC 344	Human Factors	3
PSYC 345	Organizational Psychology	3

### Applied Experimental Psychology

The undergraduate interest area in applied experimental psychology is designed for psychology majors who want to apply for graduate school in one of the following applied research fields: health, community, developmental, social, cognitive or quantitative. In addition to the required courses for the psychology major, (PSYC 201S, PSYC 317, PSYC 318W, one course from Area I, and one course from three other areas), students are encouraged to include the following in the 38 hours required for a psychology major:

PSYC 495	Topics in Psychology *	1-3
PSYC 497	Supervised Research	3
or PSYC 498	Supervised Research	
PSYC 412	Psychological Tests	3
or PSYC 417	Advanced Statistics and Computer Applications	
Select one additional Area I course from the following:		3
PSYC 410	Human Cognition	
PSYC 413	Sensation and Perception	
PSYC 414	Principles of Learning	
PSYC 424	Physiological Psychology	

\* The material covered in the topics course should reflect the student's interest in one of the applied fields listed above.

## Upper Division General Education

- Option A: Approved Disciplinary Minor (a minimum of 12 hours determined by the department) or second degree or second major.

- Option B: Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C: International Business and Regional Courses or an approved Certification Program such as teaching licensure
- Option D: Two Upper-Division Courses from outside the College of Sciences and not required by the major (6 hours)

Requirements for graduation include a minimum cumulative grade point average of 2.00 overall and in the major, 120 credit hours, which must include both a minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University, completion of ENGL 110C, ENGL 211C or 221C or 231C, and the writing intensive (W) course in the major with a grade of C or better, and completion of Senior Assessment.

## Minor in Psychology

PSYC 201S must be completed as a prerequisite for the minor in psychology and is not included in the calculation of the grade point average for the minor. The minor in psychology requires at least one course from Area I and at least one course from three different areas of the other five areas (Areas II, III, IV, V, VI). Refer to the previous section on required psychology courses for a listing of the courses in each area. PSYC 201S is a prerequisite for most 300- and 400-level psychology courses. Additional prerequisite courses may also be required. A student must earn a minimum overall cumulative grade point average of 2.00 in all psychology courses taken exclusive of 200-level courses and prerequisite courses. A minimum of six hours in the minor must be taken through courses offered by Old Dominion University. Courses in the minor may not be taken on a Pass/Fail basis.

## B.S./M.B.A. Program

Students interested in pursuing a Master of Business Administration (M.B.A.) advanced degree can earn such a degree in conjunction with a B.S. in psychology. The combined program requires five years. Students should contact the department's Undergraduate Program Office MGB 246 for more details about this program and entrance requirements.

## Honors Program in Psychology

Qualified undergraduate psychology majors have the opportunity to participate in the Honors Program in Psychology (program chair: Dr. Valerian Derlega). Students who complete the program and also meet the University's standards for graduation with honors (see description in this Catalog) may earn the designation of departmental honors on their diplomas. This program is a two- to three-course sequence that involves working on a research project under the supervision of a psychology faculty member.

Interested students should discuss their interests with a psychology faculty member who agrees to serve as the research supervisor for PSYC 497. In PSYC 497 (see prerequisites under course listing), the potential Honors student gains research experience and develops an Honors Project proposal. At the end of PSYC 497, the student submits the proposal and application for admission to the Honors Program in Psychology and, pending approval of the program chair, enrolls in PSYC 487.

In this course, the student finalizes the proposal, presents it to the Psychology Honors Program committee, secures research ethics approval, begins the thesis research, and, if the research and thesis paper are completed, may present to the Psychology Honors Program committee for approval.

Students whose projects require more than one semester to complete may enroll in PSYC 488.

Eligibility for the Honors Program in Psychology includes:

- Completion of PSYC 317 and PSYC 318W
- At least 23 hours earned in psychology
- A 3.50 GPA in the psychology major (with no grades of "Incomplete")
- A 3.25 cumulative GPA

- Completion of PSYC 497 with an Honors Project Proposal ready for submission to the Honors Program chair

Students can enroll in PSYC 487 when the submitted application and project proposal have been approved by the Honors Committee chair.

## **Psychology Awards**

The Alan L. Chaikin Psychology Honors Thesis Award is given each year to a student in the Department of Psychology for the outstanding honors thesis.

The Elizabeth C. Guy Outstanding Psychology Service Award is given each year to the student selected by the faculty who has contributed significant service to the department or field of psychology. Service is primarily defined as participation in departmental, University, community, or professional organizations. However, other qualifications, such as research activity, may be considered. Eligible students must have a minimum overall grade point average of 3.0 and 18 credits in psychology at Old Dominion University.

The Elizabeth C. Guy Outstanding Psychology Academic Award is given each year to the graduating senior with the highest overall grade point average. To be eligible, a student will have completed a minimum of 60 hours at Old Dominion University by graduation. Further, the student will have completed a minimum of 18 psychology credits at Old Dominion University. In the case where two or more students meet the criteria and have identical GPAs, the student with the highest number of credit hours earned at Old Dominion University will receive the award.

## **Advanced Placement**

The Department of Psychology offers course credit for PSYC 201S and PSYC 203S through testing procedures or Advanced Placement credit from the College Board exam. Students may also earn credit for some courses via experiential learning options. Interested students should visit the Undergraduate Program office MGB 246 for more information or refer to the section on Experiential Learning in this Catalog.

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ANGELICA J. HUIZAR, Ph.D., *Foreign Languages and Literatures*



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JENNIFER FISH, Ph.D, *Women's Studies*

# Faculty\*

**Hussein M. Abdel-Wahab** (1994; 1980). Professor of Computer Science. B.S., Cairo University (Egypt); A.M., Ph.D., University of Waterloo.

**Eileen P. Abrahamsen** (1985; 1979). Associate Professor of Communication Disorders and Special Education. A.B., Elmira College; M.S., State University of New York; Ed.D., Columbia University.

**John A. Adam** (1984; 1984) Professor of Mathematics and Statistics. B.Sc., Ph.D., University of London. Designated as a University Professor.

**Francis Adams** (2011; 1995). Professor of Political Science and Geography. B.A., Saint Thomas College, M.A., Syracuse University; Ph.D., Cornell University. Designated as a University Professor.

**Lynn S. Adams** (2011; 2011). Instructor of Communication Disorders and Special Education. B.A., Wilkes University; M.S.Ed., Old Dominion University.

**Vinod B. Agarwal** (1992; 1981). Interim Dean of the Strome College of Business and Professor of Economics. A.B., Delhi University (India); A.M., University of Delhi; Ph.D., University of California at Santa Barbara.

**Kareem A. Ahmed** (2013; 2013). Assistant Professor of Mechanical and Aerospace Engineering. B.S., State University of New York at Alfred; M.S., Ph.D., University at Buffalo, State University of New York.

**Muge Akpınar-Elci** (2013; 2013). Associate Professor of Community and Environmental Health. M.D., Dokuz Eylul University School of Medicine (Turkey); M.P.H., Tulane University.

**Thomas E. Alberts** (1999; 1986). Professor of Mechanical and Aerospace Engineering. B.S., M.S., University of Wisconsin-Milwaukee; Ph.D., Georgia Institute of Technology.

**Tami C. Al-Hazza** (2010; 2003). Associate Professor of Teaching and Learning. B.S., Old Dominion University; M.Ed., Trenton State College; Ph.D., Old Dominion University.

**Brendan Z. Allison** (2013; 2013). Research Assistant Professor of Electrical and Computer Engineering. B.S., M.S., Ph.D., University of California - San Diego.

**Jenifer Alonzo** (2014; 2007). Associate Professor of Communication and Theatre Arts. B.A., University of Colorado; M.F.A., Towson State University.

**Kelly N. Alvey** (2006; 2006). Instructor of Information Technology/Decision Sciences. B.S., Oregon State University; M.S., Indiana University.

**Moskov Amarian** (2010; 2004). Professor of Physics. M.S., Armenian Pedagogical Institute; Ph.D., Yerevan Physics Institute (Armenia).

**Nana Amoah** (2014; 2008). Associate Professor of Accounting. B.Sc., University of Science and Technology (Ghana); M.B.A., Howard University; Ph.D., Morgan State University.

**Bridget L. Anderson** (2009; 2005). Associate Professor of English. B.A., Western Carolina University; M.A., North Carolina State University; Ph.D., University of Michigan.

**Eric E. Anderson** (1990; 1984). Associate Professor of Economics. B.A., University of Wisconsin; M.A., Ph.D., University of Washington.

**Peter G. Anderson** (2013; 2013). Lecturer of Political Science and Geography. B.A., M.A., State University of New York at Albany; Ph.D., University of Utah.

**Tim J. Anderson** (2014; 2008). Associate Professor of Communication and Theatre Arts. B.A., University of Arizona; M.A., Ph.D., Northwestern University.

**Nathaniel M. Apatov** (2011; 2011). Associate Professor of Nursing. B.S.N., Pace University; M.H.S., Texas Wesleyan University; M.S.N., Ph.D., Uniformed Services University of the Health Sciences.

**Sarah A. Appleton** (2014; 2007). Senior Lecturer of English. B.A., Rhode Island College; M.A., University of Rhode Island; Ph.D., University of Connecticut.

**Alireza Ardalan** (1995; 1983). Associate Dean, Strome College of Business and Professor of Information Technology/Decision Sciences. B.Sc., University of Shiraz (Iran); M.B.A., Ph.D., University of Arizona.

**Roya K. Ardalan** (2008; 1999). Senior Lecturer of Information Technology/Decision Sciences. B.Sc., M.B.A., University of Arizona; Ph.D., Old Dominion University.

**Aaron D. Arndt** (2014; 2008). Associate Professor of Marketing. B.S., University of Oregon; M.B.A., Washington State University; Ph.D., University of Oklahoma.

**Robert Arnett** (2011; 2005). Associate Professor of Communication and Theatre Arts. B.F.A., Pacific Lutheran University; M.A., Washington State University; Ph.D., University of Southern Mississippi.

**Ivan K. Ash** (2012; 2005). Associate Professor of Psychology. B.S., Central Michigan University; M.A., Ph.D., University of Illinois at Chicago.

**Robert L. Ash** (1976; 1967). Professor of Mechanical and Aerospace Engineering. B.S., Kansas State University; M.S., Ph.D., Tulane University; P.E. Designated as an Eminent Scholar.

**Larry P. Atkinson** (1985; 1985). Professor of Ocean, Earth, and Atmospheric Sciences and Slover Professor of Oceanography. B.S., M.S., University of Washington; Ph.D., Dalhousie University (Canada). Designated as an Eminent Scholar.

**Michel Audette** (2011; 2011). Assistant Professor of Modeling, Simulation and Visualization Engineering. B.E., McGill University; M.E., Ecole Polytechnique (Canada); Ph.D., McGill University.

**Orlando Ayala** (2013; 2013). Assistant Professor of Engineering Technology. B.S., Universidad de Oriente (Venezuela); M.Sc., Ph.D., University of Delaware.

**Jonathan Backens** (2013; 2013). Lecturer of Electrical and Computer Engineering. B.S., Christopher Newport University.

**Beth Backes** (2009; 2009). Lecturer of English. B.S., Central Missouri State University; M.A., Old Dominion University.

**Erland James Baesler** (2014; 1990). Professor of Communication and Theatre Arts. B.A., M.A., San Jose State University; Ph.D., University of Arizona.

**John Blake Bailey** (2011; 2010). Mina Hohenberg Darden Professor of English. B.A., Tulane University; M.A., University of New Orleans.

**Sheila F. Baker** (2013; 2013). Lecturer of Teaching and Learning. B.S., Ohio University; M.S.L.I.S., Florida State University.

**Ian Balitsky** (2005; 1996). Professor of Physics. M.S., St. Petersburg State University (Russia); Ph.D., St. Petersburg Nuclear Physics Institute (Russia).

**Catherine M. Banks** (2007; 2005). Research Assistant Professor, Virginia Modeling, Analysis and Simulation Center. B.A., B.A., Christopher Newport University; M.A., Ph.D., Old Dominion University.

**Han P. Bao** (1992; 1992). Professor of Mechanical and Aerospace Engineering and Mitsubishi Kasei Professor of Engineering Manufacturing. B.S., M.S., Ph.D., University of New South Wales (Australia); PE.

**Nazir Barezki** (2013; 2013). Lecturer of Biological Sciences. B.S., James Madison University; M.S. Colorado State University; Ph.D., University of Virginia.

**Daniel J. Barshis** (2013; 2013). Assistant Professor of Biological Sciences. B.S., Evergreen State College; M.Sc., Ph.D., University of Hawaii at Manoa.

**Barbara Bartkus** (2003; 1997). Associate Professor of Management. B.S., M.B.A., Hawaii Pacific University; Ph.D., Texas A&M University. Designated as a University Professor.

- Ian K. Bartol** (2009; 2003). Associate Professor of Biological Sciences. B.S., University of Michigan; M.S., Ph.D., The College of William and Mary/Virginia Institute of Marine Science.
- Deborah B. Bauman** (1988; 1982). Assistant Dean of the College of Health Sciences and Associate Professor of Dental Hygiene. B.S.D.H., M.S., Old Dominion University.
- Helmut Baumgart** (2005; 2005). Professor of Electrical and Computer Engineering and Virginia Micro-Electronics Consortium Endowed Professorship in Microelectronics. B.S., University of Heidelberg (Germany); M.S., Purdue University; Ph.D., University of Stuttgart and Max Planck Institute of Solid State Research (Germany).
- Sebastian Bawab** (2009; 1992). Professor of Mechanical and Aerospace Engineering. B.S., M.S., State University of New York - Buffalo; Ph.D., The Ohio State University.
- Frederick S. Bayersdorfer** (1997; 1997). Instructor of Art and Assistant Dean for the Arts, College of Arts and Letters. B.F.A., M.A., Old Dominion University.
- Oktay Baysal** (1992; 1982). Dean of the Batten College of Engineering and Technology and Professor of Mechanical and Aerospace Engineering. B.S., Technical University of Istanbul; M.S., University of Birmingham (U.K.); Ph.D., Louisiana State University; P.E. Designated as an Eminent Scholar.
- Craig A. Bayse** (2012; 2001). Professor of Chemistry and Biochemistry. B.S., Roanoke College; Ph.D., Texas A&M University.
- Brett M. Bebber** (2012; 2012). Assistant Professor of History. B.A., Hope College; M.A., Ph.D., University of Arizona.
- Thomas W. Bean** (2013; 2013). Professor of Teaching and Learning. B.A., University of Hawaii at Manoa; M.A., Southern Oregon State College; Ph.D., Arizona State University.
- Gary A. Beck** (2011; 2011). Assistant Professor of Communication and Theatre Arts. B.A., M.A., University of Rhode Island; Ph.D., University of Texas at Austin.
- Steven M. Becker** (2012; 2012). Professor of Community and Environmental Health. B.A., The George Washington University; M.A., Columbia University; Ph.D., Bryn Mawr College.
- Stephen J. Beebe** (2007; 2007). Research Professor, Frank Reidy Research Center for Bioelectrics. B.S., Ohio University; Ph.D., Medical College of Ohio.
- Joshua G. Behr** (2010; 2001). Research Associate Professor, Virginia Modeling, Analysis and Simulation Center. A.B., M.A., California State University - Fullerton; Ph.D., University of New Orleans.
- Lee A. Belfore II** (2003; 1997). Associate Professor of Electrical and Computer Engineering. B.S., Virginia Polytechnic Institute and State University; M.S.E., Princeton University; Ph.D., University of Virginia; PE.
- Richardean S. Benjamin** (1995; 1989). Associate Dean of the College of Health Sciences and Associate Professor of Nursing. B.S.N., Armstrong State College; M.S.N., Medical College of Georgia; M.P.H., University of Pittsburgh; Ph.D., University of Texas.
- Suzanne L. Benfield** (2013; 2013). Lecturer of Nursing. B.S.N., University of Wisconsin - Green Bay; M.S.N., University of North Dakota.
- Linda K. Bennington** (2007; 2001). Senior Lecturer of Nursing. B.S., M.S., West Virginia University; B.S.N., M.S.N., Old Dominion University.
- Peter F. Bernath** (2011; 2011). Professor of Chemistry and Biochemistry. B.Sc., University of Waterloo (Canada); Ph.D., Massachusetts Institute of Technology.
- Robin F. Bernath** (2011; 2011). Visiting Assistant Professor of Biological Sciences. B.Sc., University of Toronto; M.A., Ph.D., Boston University.
- Onur Bilgen** (2012; 2012). Assistant Professor of Mechanical and Aerospace Engineering. B.S., M.S., Ph.D., Virginia Polytechnic Institute and State University.
- Jens F. Bischof** (2001; 2001). Lecturer of Ocean, Earth, and Atmospheric Sciences. B.S., M.S., Ph.D., Christian Albrechts University (Germany).
- Elizabeth C. Black** (2011; 2011). B.A., University of Glasgow (United Kingdom); M.A., Ph.D., University of Illinois - Urbana-Champaign.
- Ivanette L. Blanco** (2010; 2010). Assistant Professor of Art. B.F.A., Oklahoma State University; M.F.A., University of Oklahoma.
- James D. Blando** (2010; 2010). Assistant Professor of Community and Environmental Health. B.S., Rutgers University; M.H.S., Johns Hopkins University; Ph.D., Rutgers University.
- James. P. Bliss** (2012; 2001). Professor of Psychology. B.S., M.S., Ph.D., University of Central Florida.
- Shirley C. Blow-Brockman** (1983; 1983). Lecturer in the Writing Center. B.A., M.A., Norfolk State University.
- Robyn Bluhm** (2013; 2008). Associate Professor of Philosophy and Religious Studies. B.A., B.Sc., Laurentian University (Canada); M.A., McMaster University (Canada); Ph.D., The University of Western Ontario (Canada).
- Lisa Blum** (2011; 2011). Lecturer of Mathematics and Statistics. B.A., University of Dallas; M.S. Northeastern Illinois University.
- Jonna Linkous Bobzien** (2010; 2008). Assistant Professor of Communication Disorders and Special Education. B.S., M.S.Ed., Ph.D., Old Dominion University.
- Alexander B. Bochdansky** (2010; 2004). Associate Professor of Ocean, Earth and Atmospheric Sciences. M.S., University of Vienna (Austria); Ph.D., Memorial University of Newfoundland (Canada).
- Ramon F. Bofill** (2013; 2013). Assistant Professor of Art. B.F.A., University of Miami; M.F.A., Rhode Island School of Design.
- Przemyslaw Bogacki** (1996; 1990). Associate Professor of Mathematics and Statistics. M.S., Adam Mickiewicz University in Poznan (Poland); Ph.D., Southern Methodist University.
- Linda Bol** (2008; 2000). Professor of Educational Foundations and Leadership. B.A., M.A., California State University at Fresno; Ph.D., University of California at Berkeley.
- Stella B. Bondi** (2008; 2007). Assistant Professor of Engineering Technology. B.S., M.E.M, Ph.D., Old Dominion University.
- Maureen L. Boshier** (2012; 2012). Visiting Associate Professor of Community and Environmental Health. B.S.N., College Misericordia; M.S.N., University of Colorado - Denver; M.B.A., University of Phoenix; L.P.D., Northeastern University.
- Christopher M. Boyle** (2008; 2008). Instructor of Computer Science. B.S., Old Dominion University; M.S., Virginia Polytechnic Institute and State University.
- Carol Hanna Branch** (2013; 2013). Lecturer of Communication and Theatre Arts. B.S., Old Dominion University; M.A., University of Georgia.
- John D. Branch III** (2001; 1995). Associate Professor of Human Movement Sciences. B.A., Furman University; M.S., Ph.D., University of South Carolina.
- Charlene D. Brassington** (2011; 2007; 2008). Senior Lecturer of Community and Environmental Health. B.S., The Pennsylvania State University; M.S., Old Dominion University.
- Jane S. Bray** (2013; 2013). Dean of the Darden College of Education and Professor of Teaching and Learning. B.S., M.S.Ed., Kutztown University; Ph.D., Lehigh University.

- William Henry Brenner** (2001; 1970). Professor of Philosophy and Religious Studies. A.B., College of St. Thomas (Minnesota); A.M., Ph.D., University of Virginia.
- Ashley Brewer** (2013; 2013). Information Delivery Services Librarian and Librarian I. B.A., Stanford University; M.L.I.S., University of Washington.
- Bradley T. Brick** (2009; 2009). Assistant Professor of Sociology and Criminal Justice. B.S., University of Wisconsin – La Crosse; M.A., Georgia State University; Ph.D., University of Missouri – St. Louis.
- Miriam Bridges** (2013; 2008). Business Reference Librarian and Librarian II. B.A., Elizabeth City State University; M.L.H.R., The Ohio State University; M.L.S., University of Maryland – College Park.
- J. Christopher Brill** (2009; 2009). Assistant Professor of Psychology. A.A., University of Cincinnati; B.A., Northern Kentucky University; M.A., University of West Florida; Ph.D., University of Central Florida.
- Melissa Bristow** (2013; 2008). Senior Lecturer of Philosophy and Religious Studies. B.A., M.A., Old Dominion University.
- Colin Paul Britcher** (2002; 1985). Professor of Mechanical and Aerospace Engineering. B.S., M.S., Ph.D., Southampton University (England).
- Kenneth G. Brown** (1989; 1982). Professor of Chemistry and Biochemistry. A.B., Syracuse University; Ph.D., Brown University.
- Nina W. Brown** (1994; 1968). Professor of Counseling and Human Services. B.S., Virginia State College; M.S. in Ed., Old Dominion College; Ed.D., College of William and Mary. Designated as an Eminent Scholar.
- Robert G. Brown** (2013; 2013). Lecturer of Mathematics and Statistics. B.S., Randolph Macon College; M.S., Virginia Commonwealth University; Ph.D., Old Dominion University.
- Ann Bruhn** (2011; 2010). Assistant Professor of Dental Hygiene. B.S.D.H., M.S.D.H., Old Dominion University.
- Janet Brunelle** (2006; 1998). Senior Lecturer of Computer Science. B.S., M.S., Old Dominion University.
- Robert D. Bruno** (2013; 2013). Assistant Professor of Medical Diagnostic and Translational Sciences. B.S., James Madison University; Ph.D., University of Maryland - Baltimore.
- Heather Bryant** (2010; 2010). Lecturer of Art. B.F.A., Old Dominion University, M.F.A., Norfolk State University/Old Dominion University.
- Lindal Buchanan** (2014; 2008). Associate Professor of English. B.A., The University of Mississippi; M.A., The University of New Orleans; Ph.D., The University of Louisiana at Lafayette.
- Stephen L. Büeltman** (2012; 2003). Associate Professor of Physics. University Physics Diploma, Ph.D., Bielefeld University (Germany).
- Larisa Bulysheva** (2013; 2013). Instructor of Information Technology and Decision Sciences. B.S., M.S., Novosibirsk State University (Russia); Ph.D., Institute of Informatics Systems, Russian Academy of Sciences.
- David J. Burdige** (1999; 1985). Professor of Ocean, Earth, and Atmospheric Sciences. B.A., Swarthmore College; Ph.D., Scripps Institute of Oceanography, University of California at San Diego. Designated as an Eminent Scholar.
- Stephen Burgin** (2012; 2012). Assistant Professor of STEM Education and Professional Studies. B.S., M.Ed., Ed.S., Ph.D., University of Florida.
- Dana D. Burnett** (2013; 1972). Professor of Practice, Educational Foundations and Leadership. B.S., Allegheny College; M.S., Ph.D., Indiana University.
- Angela Busila** (2012; 2012). Instructor of Accounting. B.S. B.A., University of Missouri - St. Louis; M.B.A., Northern Illinois University; CPA.
- Brandon M. Butler** (2011; 2011). Assistant Professor of Teaching and Learning. A.A., Young Harris College; B.S., Georgia College and State University; M.A.T., Ph.D., University of Georgia.
- Carroll M. Butler, Jr.** (2006; 1997; 2006). Senior Lecturer of Communication Disorders and Special Education. B.S., M.S.Ed., Old Dominion University.
- Mark J. Butler** (2000; 1988). Professor of Biological Sciences. B.A., Wittenburg University; M.S., Ohio State University; Ph.D., Florida State University. Designated as an Eminent Scholar.
- Stephanie R. Caggiano** (2013; 2013). Instructor of Information Technology/Decision Sciences. B.S., James Madison University; M.S., M.S., The College of William and Mary.
- Anne-Taylor Cahill** (2013; 2013). Lecturer of Philosophy and Religious Studies. A.A., Georgetown Visitation College; B.A., M.A., Old Dominion University; D. Min., Graduate Theological Foundation.
- Lan Cao** (2011; 2005). Associate Professor of Information Technology/Decision Sciences. B.E, Donghua University (China); M.S., Georgia Institute of Technology; M.S., Ph.D., Georgia State University.
- Michael C. Carhart** (2009; 2004). Associate Professor of History. B.A., Bethel College; M.A., The Pennsylvania State University; Ph.D., Rutgers, The State University of New Jersey.
- Diane Cyr Carmody** (2001; 1996). Associate Professor of Sociology and Criminal Justice. B.A., M.A., Ph.D., University of New Hampshire. Designated as a University Professor.
- Kent E. Carpenter** (2005; 1996). Professor of Biological Sciences. B.S., Florida Institute of Technology; Ph.D., University of Hawaii.
- Michelle Carpenter** (2009; 2009). Instructor of Marketing. B.A./B.S., Miami University (Ohio); M.A., University of Louisiana – Monroe; M.B.A., Old Dominion University.
- Jimmie Carraway** (1992; 1985; 1992). Senior Lecturer of Information Technology/Decision Sciences. B.S., M.B.A., Old Dominion University.
- Robert W. Case** (2002; 1996). Associate Professor of Human Movement Sciences. B.S., Brockport State College; M.A., Michigan State University; Ph.D., Ohio State University.
- John D. Catravas** (2013; 2013). Professor of Medical Diagnostic and Translational Sciences. B.A., Cornell College; M.S., Ph.D., University of Mississippi.
- Mecit Cetin** (2012; 2008). Associate Professor of Civil and Environmental Engineering. B.S., Bogazici University (Turkey); M.S., Ph.D., Rensselaer University.
- George Chackman** (2011; 2003; 2011). Lecturer of Mathematics and Statistics. B.S.E.E., M.S., Old Dominion University.
- Yunbyeong Chae** (2013; 2013). Assistant Professor of Civil and Environmental Engineering. B.S., M.S., Seoul National University; Ph.D., Lehigh University.
- N. Rao Chaganty** (1998; 1982). Professor of Mathematics and Statistics. B. Stat., M. Stat., Indian Statistical Institute; M.S., Ph.D., Florida State University.
- Catherine Chamberlayne** (2009; 2009). Lecturer of Mathematics and Statistics. B.S., Virginia Commonwealth University; M.S., Virginia Polytechnic Institute and State University.
- Paul J. Champagne** (1993; 1980). Professor of Management. A.B., Providence College; A.M., University of Hartford; Ph.D., University of Massachusetts.
- David W. Chapman** (2013; 2009; 2011). Senior Lecturer of Urban Studies and Public Administration. B.S., M.S., University of Virginia; Ph.D., Old Dominion University.
- Thomas E. Chapman** (2009; 2009). Assistant Professor of Political Science and Geography. B.A., Michigan State University; M.A., University of Toledo; Ph.D., Florida State University.

- Allison T. Chappell** (2011; 2005). Associate Professor of Sociology and Criminal Justice. B.S., East Carolina University; M.A., Ph.D., University of Florida.
- Phoebe Dreux Chappell** (2013; 2013). Assistant Professor of Ocean, Earth and Atmospheric Sciences. B.A., Amherst College; Ph.D., Massachusetts Institute of Technology/Woods Hole Oceanographic Institute.
- Shanan L. Chappell** (2011; 2011). Research Assistant Professor, Center for Educational Partnerships. B.A., Virginia Wesleyan College; M.Ed., Regent University; Ph.D., Old Dominion University.
- Dean C. Chatfield** (2013; 2006). Associate Professor of Information Technology/Decision Sciences. B.S., Rensselaer Polytechnic Institute; M.B.A., M.S., Ph.D., The Pennsylvania State University.
- Sushil K. Chaturvedi** (1991; 1978). Professor of Mechanical and Aerospace Engineering. B.S., Indian Institute of Technology (India); M.S., Case Institute of Technology; Ph.D., Case Western Reserve University.
- Chung-Hao Chen** (2011; 2011). Assistant Professor of Electrical and Computer Engineering. B.S., M.S., Fu-Jen Catholic University (Taiwan); Ph.D., University of Tennessee.
- Hai-Lan Chen** (2012; 2012). Research Assistant Professor, Frank Reidy Research Center for Bioelectrics. B. Med., Hubei Medical University (China); M.D., Beijing Medical University; Ph.D., Liverpool University (United Kingdom).
- Yeong-Jer Chen** (2011; 2011). Research Assistant Professor, Frank Reidy Research Center for Bioelectrics. B.S.E.E., M.S., Ph.D., Texas Tech University.
- Yi-Fan Chen** (2008; 2008). Assistant Professor of Communication and Theatre Arts. B.A., National Cheng-Kung University (Taiwan); M.A.J., M.A., Marshall University; Ph.D., Rutgers University.
- Raymond Cheng** (2011; 2011). Lecturer of Mathematics and Statistics. B.A., M.S., Ph.D., University of Virginia.
- Andrey Chernikov** (2011; 2010). Assistant Professor of Computer Science. B.S., M.S., Kabardino-Balkar State University (Russia); Ph.D., The College of William and Mary.
- Laura C. Chezan** (2013; 2013). Assistant Professor of Communication Disorders/Special Education. B.S., B.S., M.Ed., Babes-Bolyai University of Cluj-Napoca (Romania); M.Ed., Ph.D., University of South Carolina.
- Nikos Chrisochoides** (2010; 2010). Professor of Computer Science. B.Sc., Aristotle University (Greece); M.Sc., Ph.D., Purdue University.
- Konstantin P. Cigularov** (2010; 2010). Assistant Professor of Psychology. B.S., University of Economics (Bulgaria); M.S., East Central University; Ph.D., Colorado State University.
- Denise M. Claiborne** (2012; 2012). Lecturer of Dental Hygiene. B.S., B.S.D.H., M.S., Old Dominion University.
- Eva G. Clarke** (2006; 1992; 2006). Senior Lecturer of Psychology. B.S., M.S., Old Dominion University.
- Michael L. Clemons** (1999; 1993). Associate Professor of Political Science and Geography. B.A., M.A., University of Maryland-College Park; Ph.D., Atlanta University.
- Vittorio Colaizzi** (2012; 2012). Assistant Professor of Art. B.A., Mary Washington College; M.F.A., Ph.D., Virginia Commonwealth University.
- Sheri R. Colberg-Ochs** (2009; 1997). Professor of Human Movement Sciences. B.A., Stanford University; M.A., University of California at Davis; Ph.D., University of California at Berkeley.
- Christopher B. Colburn** (1993; 1987). Associate Professor of Economics. B.A., M.A., University of Texas at Arlington; Ph.D., Texas A&M University.
- Faye E. Coleman** (1984; 1978). Associate Professor of Medical Diagnostic and Translational Sciences. B.S., Hampton Institute; M.S.M.T., St. John's University.
- Jamie R. Colwell** (2012; 2012). Assistant Professor of Teaching and Learning. B.A., M.A., Ph.D., Clemson University.
- Carol Considine** (2005; 1999). Associate Professor of Engineering Technology. B.S., Virginia Polytechnic Institute and State University; M.S., University of California at Berkeley.
- David P. Cook** (2003; 1997). Associate Professor of Information Technology/Decision Sciences. B.S.B.A., M.B.A., Bowling Green State University; Ph.D., University of Kentucky.
- Desmond C. Cook** (1996; 1981). Professor of Physics. B.Sc. (Honors), Ph.D., Monash University (Australia). Designated as a University Professor.
- John B. Cooper** (1999; 1993). Associate Professor of Chemistry and Biochemistry. B.S., The Citadel; Ph.D., North Carolina State University.
- Joseph P. Cosco** (2004; 1994; 1997). Associate Professor of English. A.B., Dartmouth College; M.A., Columbia University; Ph.D., The College of William and Mary.
- T. Steven Cotter** (2013; 2013). B.S., Southwest Missouri State; B.S., M.B.A., University of South Carolina; M.S., University of Massachusetts; Ph.D., Old Dominion University.
- Matilda W. Cox** (2006; 1994). Senior Lecturer of English. B.A., M.A., Old Dominion University.
- Elena Craig** (2011; 2011). Lecturer of Mathematics and Statistics. A.S., Orange County Community College (New York); B.S., M.S., Ph.D., Old Dominion University.
- Laurie M. Craigen** (2013; 2007). Associate Professor of Counseling and Human Services. B.S., College of the Holy Cross; M.Ed., Ed.D., The College of William and Mary.
- Deborah P. Crofford** (2013; 2013). Lecturer of Mathematics and Statistics. A.S., Tidewater Community College; B.S., M.S., Old Dominion University.
- Helen Crompton** (2013; 2013). Assistant Professor of Teaching and Learning. B.A., Manchester Metropolitan University (United Kingdom); P.G.C.E., University of Liverpool (United Kingdom); M.Ed., Elon University; Ph.D., University of North Carolina at Chapel Hill.
- Kimberly A. Curry-Lourenco** (2007; 2001). Senior Lecturer of Nursing. B.S.N., M.S.N., M.S.Ed., Old Dominion University.
- Gregory A. Cutter** (1994; 1982). Professor of Ocean, Earth, and Atmospheric Sciences. B.A., Revelle College, University of California at San Diego; Ph.D., University of California at Santa Cruz.
- Martha M. Daas** (2008; 2002). Associate Professor of Foreign Languages and Literatures. B.A., University of Michigan; M.A., Ph.D., University of Texas - Austin.
- Mengyan Dai** (2011; 2011). Assistant Professor of Sociology and Criminal Justice. B.A., LL.B., University of Science and Technology of China; Ph.D., University of Cincinnati.
- Dayle A. Daines** (2012; 2012). Assistant Professor of Biological Sciences. B.Sc., University of Calgary (Canada); M.S., University of Rochester; Ph.D., University of Missouri - Columbia.
- Kenneth Glenn Daley** (1979; 1965). Professor of Art. B.F.A., Philadelphia (Museum) College of Art; M.F.A., School of Art and Architecture of Yale University. Designated as a University Professor.
- Susan J. Daniel** (2014; 2014). Associate Professor of Dental Hygiene. A.A.S., Wayne Community College; B.S., University of North Carolina at Chapel Hill; M.S., University of Kentucky; Ph.D., University of Mississippi Medical Center.

- Charles B. Daniels** (2008; 2008). Lecturer of Engineering Management and Systems Engineering. B.S., University of the State of New York; M.S., The George Washington University.
- Mona Danner** (2007; 1993). Professor of Sociology and Criminal Justice. B.A., University of Missouri-Kansas; M.A., Sam Houston State University; Ph.D., The American University.
- Daniel M. Dauer** (1987; 1975). Professor of Biological Sciences. B.S., Old Dominion University; Ph.D., University of South Florida. Designated as an Eminent Scholar. Joint appointment with the Department of Ocean, Earth, and Atmospheric Sciences.
- Donald D. Davis** (1987; 1982). Associate Professor of Psychology. B.S., M.S., Central Michigan University; Ph.D., Michigan State University.
- Shari A. Davis** (2010; 2001). Senior Lecturer of Mathematics and Statistics. B.A., M.S.Ed., Queens College, City University of New York.
- Sharon R. Davis** (2009; 2002). Senior Lecturer of STEM Education and Professional Studies. B.S., M.S.Ed., Old Dominion University.
- Frank Patterson Day, Jr.** (1986; 1974). Professor of Biological Sciences. B.S., University of Tennessee; M.S., Ph.D., University of Georgia. Designated as an Eminent Scholar.
- Diana L. Deadrick** (1997; 1993). Associate Professor of Management. B.S., West Virginia Institute of Technology; M.B.A., Ph.D., Virginia Polytechnic Institute and State University.
- Anthony W. Dean** (2013; 2001; 2013). Lecturer, Engineering Fundamentals Division. B.S., Old Dominion University; M.B.A., The College of William and Mary; Ph.D., Old Dominion University.
- Dianne de Beixedon** (1980; 1974). Associate Professor of Art. A.B., Southern Illinois University; M.F.A., University of Georgia.
- Alicia DeFonzo** (2011; 2011). Instructor of English. B.A., University of South Florida; M.A., Old Dominion University.
- Jean R. Delayen** (2009; 2009). Professor of Physics and Director of the Center for Accelerator Science. Ingénieur, Ecole Nationale Supérieure d'Arts et Métiers (France); M.S., Ph.D., California Institute of Technology; M.B.A., University of Chicago.
- Robert Del Corso** (2008; 2008). Lecturer of History. B.A., John Carroll University; M.A., Naval Postgraduate School; M.R.E., Loyola University.
- Gianluca DeLeo** (2012; 2006). Associate Professor of Medical Diagnostic and Translational Sciences. M.B.A., St. Louis University; M.S., Ph.D., University of Genoa (Italy).
- Ayodeji O. Demuren** (1996; 1990). Professor of Mechanical and Aerospace Engineering. B.Sc., Ph.D., Imperial College London (England).
- Declan De Paor** (2012; 2008). Professor of Physics. B.Sc., National University of Ireland, Dublin; M.Sc., Ph.D., National University of Ireland, Cork.
- Valerian John Derlega** (1984; 1971). Professor of Psychology. A.B., City College of New York; Ph.D., University of Maryland.
- Chandra R. de Silva** (1998; 1998). Vice Provost for Faculty and Program Development and Professor of History. B.A., University of Ceylon; Ph.D., University of London (United Kingdom).
- Shirshak K. Dhali** (2006; 2006). Associate Dean of the Batten College of Engineering and Technology and Professor of Electrical and Computer Engineering. B.Tech., Indian Institute of Technology (India); M.S., Ph.D., Texas Tech University; PE.
- Norou Diawara** (2012; 2006). Associate Professor of Mathematics and Statistics. B.A., University of Cheick Anta Diop (Senegal); M.S., University of LeHarve (France); M.S., University of South Alabama; Ph.D., Auburn University.
- Rafael Diaz** (2008; 2008). Research Assistant Professor, Virginia Modeling, Analysis and Simulation Center. B.S., Jose Maria Vargas University (Venezuela); M.B.A., Ph.D., Old Dominion University.
- Daniel L. Dickerson** (2009; 2004). Associate Professor of STEM Education and Professional Studies. B.S., University of North Carolina at Chapel Hill; M.S., Ph.D., North Carolina State University.
- Gail K. Dickinson** (2013; 2004). Associate Dean, Darden College of Education, and Professor of Teaching and Learning. B.S., Millersville University; M.S.L.S., University of North Carolina at Chapel Hill; Ph.D., University of Virginia.
- Fred C. Dobbs** (2006; 1993). Professor of Ocean, Earth, and Atmospheric Sciences. A.B., Franklin and Marshall College; M.S., University of Connecticut; Ph.D., Florida State University.
- Gail Dodge** (2006; 1995). Professor of Physics. B.A., Princeton University; M.S., Ph.D., Stanford University.
- John R. Donat** (1997; 1991). Associate Professor of Chemistry and Biochemistry. B.S., Humboldt State University; Ph.D., University of California at Santa Cruz. Joint appointment with the Department of Ocean, Earth, and Atmospheric Sciences.
- J. Mark Dorrepaal** (2003; 1976). Professor of Mathematics and Statistics. B.Sc., University of Windsor (Canada); M.Sc., Ph.D., University of Toronto.
- John A. Doukas** (1989; 1989). Professor of Finance and William B. Spong, Jr. Endowed Professor of Business. B.A., Athens University (Greece); M.Sc., Stirling University (U.K.); Ph.D., New York University. Designated as an Eminent Scholar.
- Michael J. Doviak** (1983; 1975). Associate Professor of Mathematics and Statistics. A.B., Alfred University; A.M., Bucknell University; M.Stat., Ph.D., University of Florida.
- Suzanne D. Doviak** (1999; 1980; 1999). Lecturer of Mathematics and Statistics. B.A., State University of New York at Buffalo; B.A., M.A., Old Dominion University.
- Joyce Marie Downs** (2011; 2010). Assistant Professor of Dental Hygiene. B.S.D.H., M.S.D.H., Old Dominion University.
- Darryl C. Draper** (2013; 2013). Assistant Professor of STEM Education and Professional Studies. B.A., Temple University; M.A., Ph.D., Pennsylvania State University.
- Juan Du** (2011; 2011). Assistant Professor of Economics. B.A., Fudan University (China); Ph.D., University of California at Davis.
- Jozef Dudek** (2012; 2006). Associate Professor of Physics. M.Phys., D. Phil., University of Oxford (United Kingdom).
- Michael Dulick** (2012; 2012). Research Associate Professor of Chemistry and Biochemistry. B.Sc., Carnegie-Mellon University; Ph.D., Massachusetts Institute of Technology.
- Judith Dunkerly-Bean** (2013; 2013). Assistant Professor of Teaching and Learning. B.S., M.Ed., Ph.D., University of Nevada, Las Vegas.
- Jill Dustin** (2004; 1998). Associate Professor of Counseling and Human Services. B.S., Northern Kentucky University; M.A., Ph.D., University of Cincinnati. Designated as a University Professor.
- David C. Earnest** (2009; 2004). Associate Dean of the College of Arts and Letters and Associate Professor of Political Science and Geography. B.A., Stanford University; M.A., Ph.D., The George Washington University.
- Angela Eckhoff** (2011; 2011). Assistant Professor of Teaching and Learning. B.S., Kansas State University; M.S.Ed., University of Kansas; Ph.D., University of Colorado - Boulder.
- Patricia Edwards** (2011; 2006). Senior Lecturer of Art. B.F.A., Rhode Island School of Design; M.F.A., State University of New York at New Paltz.

- Ayman M. T. Ahmed Elmesalami** (2014; 2014). Lecturer of Computer Science. B.S., University of Zagazig (Egypt); Ph.D., Kansas State University.
- Abdelmageed A. Elmustafa** (2010; 2005). Associate Professor of Mechanical and Aerospace Engineering. B.S., M.S., South Dakota State University; M.S., Ph.D., University of Wisconsin - Madison.
- Hani E. Elsayed-Ali** (1997; 1992). Professor of Electrical and Computer Engineering and Director of the Applied Research Center. B.S., University of Miami; M.S., Ph.D., University of Illinois-Urbana. Designated as an Eminent Scholar. Designated as the Batten Endowed Professor of Electrical and Computer Engineering.
- Mary C. Enderson** (2012; 2011). Associate Professor of STEM Education and Professional Studies. B.S., M.S.Ed., Old Dominion University; Ph.D., University of Georgia.
- A. James English** (2002; 1988). Associate Professor of Community and Environmental Health. B.S., Lebanon Valley College; M.S., Old Dominion University.
- Mujde Erten-Unal** (1999; 1993). Associate Professor of Civil and Environmental Engineering. B.S., Middle East Technical University (Turkey); M.S., Ph.D., University of Missouri-Rolla.
- Nestor Escobales** (2010; 2010). Lecturer of Engineering Technology. B.S., Polytechnic Institute of Puerto Rico; M.S., University of Illinois – Urbana-Champaign; PE.
- Elizabeth Esinhart** (1998; 1994). Senior Lecturer of Political Science. B.A., Mount Holyoke College; J.D., Duke University School of Law. Designated as Director of Interdisciplinary Studies/Teacher Preparation Programs, College of Arts and Letters.
- Peter Eudenbach** (2010; 2003). Associate Professor of Art. B.A., Providence College; B.F.A., Massachusetts College of Art; M.F.A., The Ohio State University.
- Rodney L. Evans** (2013; 1992; 2007). Senior Lecturer of Philosophy and Religious Studies. B.A., Old Dominion University; M.A., Ph.D., University of Virginia.
- Tal Ezer** (2009; 2006). Professor of Ocean, Earth, and Atmospheric Sciences. B.Sc., M.Sc., Hebrew University (Israel); Ph.D., Florida State University.
- Betty Rose Facer** (1996; 1996). Director of the Foreign Languages Laboratory and Senior Lecturer of Foreign Languages and Literatures. B.A., State University of New York College at Oswego; M.A., Syracuse University.
- Patrick S. Farrell** (2012; 2012). Lecturer of English. B.A., University of Virginia; M.A., Old Dominion University.
- Larry H. Filer II** (2005; 1999). Associate Professor of Economics. B.A., Westminster College; M.A., Ph.D., University of Kentucky.
- Stephanie Annette Finley-Croswhite** (2009; 1991). Professor of History. B.A., University of Richmond; M.A., Ph.D., Emory University.
- Jennifer N. Fish** (2006; 2006). Associate Professor of Women’s Studies. B.A., M.A., Bowling Green State University; Ph.D., The American University.
- Kenneth Fitzgerald** (2012; 2001). Professor of Art. B.F.A., M.F.A., Massachusetts College of Art.
- Robin Flanagan** (2013; 2013). Lecturer of Mathematics and Statistics. B.S., M.S.Ed., Old Dominion University.
- Charlene E. Fleener** (2004; 1998). Associate Professor of Teaching and Learning. B.S., M.S., University of Houston - Clear Lake; Ed.D., Texas A&M University - Commerce.
- Isaac L. Flory, IV** (2008; 2002). Associate Professor of Engineering Technology. B.S., M.S., Ph.D., Virginia Polytechnic Institute and State University; P.E.
- Sara B. Forbus** (2011; 2011). Lecturer of Nursing. B.S.N., Northern Michigan University; M.A., Webster University; M.S.N., Old Dominion University.
- John B. Ford, IV** (1997; 1985). Professor of Marketing. B.A., Yale University; M.B.A., Ph.D., University of Georgia. Designated as an Eminent Scholar.
- Christiane Nesbit Fowler** (2010; 2009). Assistant Professor of Nursing. B.S.N., University of Texas Medical Branch – Galveston; M.S., University of Maryland – Baltimore.
- George J. Fowler** (2011; 2011). Interim University Librarian and Librarian III. B.S., M.S.L.S., University of North Texas.
- Kathleen M. Fowler** (2010; 2004). Senior Lecturer of English. B.A., The College of William and Mary; M.F.A., Old Dominion University.
- Joy Lynn Francis** (2013; 2013). Lecturer of Communication and Theatre Arts. B.A., University of West Florida; M.A., M.A., Ph.D., Regent University.
- Stuart Frazer** (2013; 1995). Head, Access Services and Librarian IV. B.A., Tulane University, M.L.S., Rutgers University.
- Michael Lance Frazier** (2010; 2010). Assistant Professor of Management. B.S., Oklahoma State University; M.B.A., Oklahoma City University; Ph.D., Oklahoma State University.
- Vaughan B. Frederick** (2014; 2009). Senior Lecturer of Women’s Studies. B.A., Georgia State University; M.A., Old Dominion University.
- Morel Ann Fry** (1999; 1986). Management Services Librarian and Librarian III. B.A., University of Wisconsin at Madison; M.A.L.S., University of Denver.
- Agnes Fuller** (2006; 1991). Senior Lecturer of Music. B.A., Westhampton College; M.M., University of Maryland.
- Robert A. Gable** (1990; 1984). Professor of Communication Disorders and Special Education. B.S., Kutztown College; Ed.S., Ph.D., George Peabody College of Vanderbilt University. Designated as Eminent Scholar.
- Holly Gaff** (2013; 2007). Associate Professor of Biological Sciences. B.S., Taylor University; Ph.D., University of Tennessee – Knoxville.
- Randy R. Gainey** (2007; 1995). Professor of Sociology and Criminal Justice. B.A., M.A., Western Washington University; Ph.D. University of Washington.
- Joanna K. Garner** (2011; 2011). Research Assistant Professor, Center for Educational Partnerships. B.Sc., M. Phil., University of Surrey (United Kingdom); Ph.D., The Pennsylvania State University.
- Kurt Taylor Gaubatz** (2000; 2000). Associate Professor of International Studies. A.B., University of California at Berkeley; M.A.L.D., The Fletcher School of Law and Diplomacy, Tufts University; M.Div., Princeton Theological Seminary; Ph.D., Stanford University.
- David T. Gauthier** (2014; 2008). Associate Professor of Biological Sciences. B.S., Michigan State University; Ph.D., Virginia Institute of Marine Science of The College of William and Mary.
- Sabra B. Gear** (2014; 2008). Senior Lecturer of Communication Disorders and Special Education. A.A.S., Southside Virginia Community College; B.A., Mary Baldwin College; M.S.Ed., Ph.D., Old Dominion University.
- Beverly A. George** (2013; 2013). Lecturer of Psychology. B.A., Worcester State College; M.A., Assumption College.
- Jennifer E. Georgen** (2014; 2008). Associate Professor of Ocean, Earth and Atmospheric Sciences. B.A., University of Virginia; Ph.D., Massachusetts Institute of Technology/Woods Hole Oceanographic Institute.

- Adrian V. Gheorghe** (2006; 2006). Professor of Engineering Management and Systems Engineering and Batten Endowed Chair in System of Systems Engineering. M.B.A., Academy of Economic Studies (Romania); M.Sc., M.Sc., Bucharest Polytechnic Institute (Romania); Ph.D., City University London (United Kingdom).
- Karen E. Higgins Gillikin** (2010; 2010). Lecturer of Nursing. B.S.N., Old Dominion University; M.S., M.S.N., Virginia Commonwealth University/ Medical College of Virginia.
- Scott M. Girdner** (2012; 2012). Assistant Professor of Philosophy and Religious Studies. B.A., Virginia Commonwealth University; M.A., Ph.D., Boston University.
- Chris R. Glass** (2012; 2012). Assistant Professor of Educational Foundations and Leadership. B.A., University of Texas - Austin; M.A., Biola University; Ph.D., Michigan State University.
- Myron Glassman** (1986; 1976). Professor of Marketing. B.S., A.B., A.M., Ph.D., University of Illinois.
- David M. Godden** (2010; 2008). Assistant Professor of Philosophy and Religious Studies. B.A., Wilfrid Laurier University (Canada); M.A., York University (Canada); Ph.D., McMaster University (Canada).
- Alexander L. Godunov** (2011; 2005). Associate Professor of Physics. M.S., Ph.D., Moscow State University (Russia).
- Farideh Goldin** (2010; 2008). Lecturer of English. B.A., M.A., M.F.A., Old Dominion University.
- Edwin Gómez** (2006; 2000). Associate Professor of Human Movement Sciences. B.S. Salem State College; M.S., Rochester Institute of Technology; Ph.D., Michigan State University.
- Oscar R. Gonzalez** (2014; 1988). Professor of Electrical and Computer Engineering. B.S., University of Idaho; M.S., Ph.D., University of Notre Dame.
- Emily Goodman-Scott** (2014; 2014). Assistant Professor of Counseling and Human Services. B.S., James Madison University; M.A.Ed., Ph.D., Virginia Polytechnic Institute and State University.
- Mahesh Gopinath** (2009; 2005). Associate Professor of Marketing. B.Tech., College of Engineering (Trivandrum, India); M.B.A., Institute of Rural Management (India); M.S., Ph.D., University of Michigan - Ann Arbor.
- Stephen B. Gordon** (2013; 2011). Professor of Practice, Urban Studies and Public Administration. B.A., M.A., Mississippi State University; Ph.D., University of Maryland - College Park.
- Andrew M. Gordus** (2012; 2006). Associate Professor of Foreign Languages and Literatures. B.A., Wabash College; M.A., Bowling Green State University; Ph.D., Arizona State University.
- Melva R. Grant** (2010; 2010). Assistant Professor of STEM Education and Professional Studies. B.S., Coppin State University; B.S., University of Maryland – College Park; M.Ed., Ph.D., The Ohio State University.
- Terri Grant** (2011; 2008). Lecturer of Mathematics and Statistics. B.S., Christopher Newport University; M.S., Ph.D., Old Dominion University.
- Tonia Graves** (2011; 2000). Electronic Resources Librarian and Librarian III. B.A., Old Dominion University; M.S.L.S., Catholic University of America.
- Deborah C. Gray** (2012; 2012). Lecturer of Nursing. B.A., University of North Carolina; M.S.N., McGill University (Canada); D.N.P., Old Dominion University.
- Charles P. Gray** (2004; 2004). Lecturer of Sociology and Criminal Justice. A.A., Adirondack Community College; B.S., M.A., Old Dominion University.
- William Steven Gray** (2002; 1996; 1998). Associate Professor of Electrical and Computer Engineering. B.S., Purdue University; M.S., M.S., Ph.D., Georgia Institute of Technology.
- Lesley Hope Greene** (2012; 2006). Associate Professor of Chemistry and Biochemistry. B.S., Ph.D., University of Miami.
- Dennis E. Gregory** (2005; 2000). Associate Professor of Educational Foundations and Leadership. A.A., Ferrum College; B.S., James Madison University; M.Ed., Ed.D., University of Virginia.
- Richard V. Gregory** (2003; 2003). Professor of Chemistry and Biochemistry. B.S., Old Dominion University; Ph.D., Clemson University.
- John M. Griffith** (2011; 1999). Professor of Finance. B.S., University of Southwestern Louisiana; Ph.D., University of Alabama. Designated as a University Professor.
- Gail C. Grisetti** (1992; 1986). Associate Professor of Physical Therapy and Athletic Training. B.A., Bard College; M.S., Columbia University.
- Chester E. Grosch** (1973; 1973). Professor of Ocean, Earth, and Atmospheric Sciences and Computer Science. M.E., M.S., Ph.D., Stevens Institute of Technology. Designated as an Eminent Professor. Joint appointment with the Department of Computer Science.
- Timothy J. P. Grothaus** (2011; 2005). Associate Professor of Counseling and Human Services. B.A., University of Notre Dame; M.S., Illinois State University; Ph.D., The College of William and Mary.
- Luis Guadano** (2011; 2011). Assistant Professor of Foreign Languages and Literatures. B.A., Universidad Complutense de Madrid (Spain); M.A., Texas A & M University - College Station; Ph.D., University of Minnesota - Twin Cities.
- Siqi Guo** (2013; 2013). Research Assistant Professor, Frank Reidy Research Center for Bioelectrics. M.S., Academy of Military Medical Sciences (China); M.D., Zhejiang Medical University (China).
- Abha Gupta** (2003; 1997). Associate Professor of Teaching and Learning. M.Phil., University of Delhi (India); M.S., Ph.D., University of Arizona.
- Rekha Gupta** (2013; 2013). Lecturer of Computer Science. B.Arch., Bangalore University (India); M.Arch., Ohio State University.
- Alexander Gurevich** (2011; 2011). Professor of Physics. B.S., M.S., Moscow Institute of Steel and Alloys (Russia); Ph.D., Institute of High Temperatures, USSR Academy of Sciences (Russia).
- Imtiaz Habib** (2007; 1995). Professor of English. B.A., Oxford University (U.K.); Ph.D., Indiana University.
- Emily M. Gussenhoven** (2013; 2013). Lecturer of Chemistry and Biochemistry. B.A., Mount Holyoke College; M.S., University of Washington; Ph.D., University of California - Davis.
- John R. Hackworth** (1996; 1988). Associate Professor of Engineering Technology. A.A.S., B.S.E.T., M.E., Old Dominion University. Designated as a University Professor.
- Randy C. Haddock** (2013; 2013). Lecturer - Engineering Fundamentals Division. A.A.S., Pitt Community College; B.S., M.E., Old Dominion University; Ed.S., University of Virginia.
- Adolphus C. Hailstork** (2000; 2000). Professor of Music. B.M., Howard University; M.M., The Manhattan School of Music; Ph.D., Michigan State University. Designated as an Eminent Scholar.
- Russell Haines** (2010; 2004). Associate Professor of Information Technology/Decision Sciences. B.S., M.Acc., Brigham Young University; Ph.D., University of Houston.
- James M. Hall** (2011; 2006). Associate Professor of Music. B.M.E., University of Wisconsin – Stevens Point; M.M., University of Arizona; Ph.D., University of Minnesota.



**Tiffany M. Hall** (2013; 2013). Lecturer of Teaching and Learning. B.S., Virginia State University; M.A., Norfolk State University; Ed.S., Cambridge College.

**Maura E. Hametz** (2013; 1996). Professor of History. B.A., Colgate University; Ph.D., Brandeis University.

**Katherine Hammond** (2009; 2006). Assistant Professor of Communication and Theatre Arts. B.A., University of Louisville; M.F.A., University of Georgia.

**Holly A. Handley** (2010; 2010). Assistant Professor of Engineering Management and Systems Engineering. B.S., Clarkson College; M.S., University of California at Berkeley; M.B.A., University of Hawaii at Manoa; Ph.D., George Mason University; PE.

**Tina S. Haney** (2012; 2012). Lecturer of Nursing. B.S.N., Medical College of Virginia/Virginia Commonwealth University; M.S.N., University of Virginia; D.N.P., Old Dominion University.

**Christopher Hanna** (1999; 1993). Associate Professor of Communication and Theatre Arts. B.A., Trinity College; M.F.A., University of California-San Diego.

**Julie Zhili Hao** (2012; 2006). Associate Professor of Mechanical and Aerospace Engineering. B.S., M.S., Shanghai Jiao Tong University (China); Ph.D., University of Central Florida.

**Barbara Y. Hargrave** (1995; 1989). Associate Professor of Medical Diagnostic and Translational Sciences. B.S., Hampton University; M.S., Medical College of Virginia; Ph.D., Bowman Gray School of Medicine. Joint appointment with the School of Physical Therapy and Athletic Training.

**Carla J. Harrell** (2010; 2002). Senior Lecturer of Communication and Theatre Arts. B.S., M.A., Old Dominion University.

**Alexander Harris, Jr.** (2007; 2007). Lecturer in the English Language Center. B.S., M.A., Old Dominion University.

**Charles B. Harris** (2012; 2012). Instructor of Mathematics and Statistics. B.S., M.S., Old Dominion University.

**Adrienne Grant Hartgerink** (2011; 2011). Lecturer of Nursing. B.S.N., James Madison University; M.S.N., Uniformed Services University of the Health Sciences; Ph.D., University of Minnesota - Minneapolis.

**Dennis L. Harvey** (2011; 2011). Instructor of Finance. B.S., Old Dominion University; M.B.A., M.H.R., Troy State University.

**H. Rodger Harvey** (2010; 2010). Professor of Ocean, Earth, and Atmospheric Sciences. B.S., Virginia Polytechnic Institute and State University; Ph.D., The University of Georgia.

**Frances Janet Hassencahl** (2010; 1976). Associate Professor of Communication and Theatre Arts. A.B., Goshen College; M.A., Ph.D., Case Western Reserve University.

**Lawrence J. Hatab** (1992; 1976). Professor of Philosophy and Religious Studies and Louis I. Jaffe Professor of Arts & Letters. A.B., A.M., Villanova University; Ph.D., Fordham University. Designated as a University Professor and an Eminent Scholar.

**Patrick G. Hatcher** (2005; 2005). Professor of Chemistry and Biochemistry and Batten Endowed Chair in Physical Sciences. B.S., North Carolina State University; M.S., University of Miami; Ph.D., University of Maryland - College Park. Joint appointment with the Department of Ocean, Earth and Atmospheric Sciences.

**Mark D. Havey** (1991; 1980). Professor of Physics. B.S., University of Maine; Ph.D., University of New Hampshire. Designated as an Eminent Scholar.

**Janice Hawkins** (2014; 2008). Senior Lecturer of Nursing. B.S.N., University of South Carolina; M.S.N., Medical University of South Carolina.

**Danica G. Hays** (2009; 2006). Associate Professor of Counseling and Human Services. B.S., Kennesaw State University; M.S., Ph.D., Georgia State University

**Jing He** (2009; 2009). Associate Professor of Computer Science. B.S., Jilin University (China); M.S., New Mexico State University; Ph.D., Baylor College of Medicine.

**Michelle D. Heart** (2013; 2013). Lecturer of English. A.A., Northern Virginia Community College; B.A., M.A., Old Dominion University.

**Ingo K. Heidbrink** (2010; 2007). Professor of History. M.A., Ph.D., University of Hamburg (Germany); Dr. phil. habil., University of Bremen (Germany).

**Dana A. Heller** (2002; 1990). Professor of English. B.A., Goddard College; M.F.A., Columbia University; Ph.D., City University of New York. Designated as an Eminent Scholar.

**Loree C. Heller** (2010; 2008). Associate Professor of Medical Diagnostic and Translational Sciences. B.S., Oregon State University; M.S., Long Island University; Ph.D., University of South Florida College of Medicine.

**Richard Heller** (2008; 2008). Professor of Medical Diagnostic and Translational Sciences and Executive Director of the Frank Reidy Research Center for Bioelectrics. B.S., Oregon State University; M.S., Long Island University - C.W. Post Center; M.S., Ph.D., University of South Florida College of Medicine. Designated as an Eminent Scholar.

**Laurie J. Henry** (1999; 1993). Associate Professor of Accounting. B. Envir. Design, North Carolina State University; M.P. Acct., Loyola College; Ph.D., University of Mississippi. Designated as a University Professor.

**James M. Henson** (2011; 2005). Associate Professor of Psychology. B.S., Truman State University; M.A., Ph.D., University of California at Los Angeles.

**Patrick T. Hester** (2013; 2007). Associate Professor of Engineering Management and Systems Engineering. B.S., Webb Institute of Naval Architecture; Ph.D., Vanderbilt University.

**Peggy P. Hester** (2006; 1999). Professor of Communication Disorders and Special Education. B.S., Carson Newman College; M.A., Ph.D., George Peabody College of Vanderbilt University.

**Pamela S. Hilke** (2013; 2010). Lecturer of Medical Diagnostic and Translational Sciences. B.A., Virginia Wesleyan College; M.P.L., Carlow University.

**Edward L. Hill** (2011; 2005; 2011). Assistant Professor of Human Movement Sciences. B.S., M.S.Ed., Old Dominion University; Ph.D., University of Utah.

**Laura C. Hill** (2011; 2005; 2011). Lecturer of Human Movement Sciences. B.S., M.S.Ed., Old Dominion University; Ph.D., University of Utah.

**Leanne B. Hillery** (2010; 2010). Cataloging and Metadata Services Librarian and Librarian III. B.A., West Virginia University; M.I.L.S., University of Michigan; M.B.A., Regent University.

**Natalie A. Hinton** (2013; 2013). Lecturer of Mathematics and Statistics. B.S., University of North Carolina - Wilmington; M.S., Western Carolina University.

**Johanna Marie Hoch** (2014; 2013) Assistant Professor of Physical Therapy and Athletic Training. B.S., Ohio Northern University; M.S., Ohio University; Ph.D., University of Kentucky.

**Matthew C. Hoch** (2011; 2011). Assistant Professor of Physical Therapy and Athletic Training. B.S., East Stroudsburg University; M.S., Ohio University; Ph.D., University of Kentucky.

**Joyce Hoffmann** (2000; 1994). Associate Professor of English. B.A., Fairleigh Dickinson University; M.S., Boston University; Ph.D., New York University.

- Eileen E. Hofmann** (1995; 1989). Professor of Ocean, Earth, and Atmospheric Sciences. B.S., Chestnut Hill College; M.S., Ph.D., North Carolina State University.
- Elizabeth M. Hogue** (2006; 1999). Humanities Reference Librarian and Librarian III. B.A., M.L.S., San Jose State University.
- Robert H. Holden** (2006; 1993). Professor of History. B.J., University of Missouri; M.A., The Pennsylvania State University; Ph.D., University of Chicago.
- Alvin A. Holder** (2013; 2013). Associate Professor of Chemistry and Biochemistry. B.Sc., Ph.D., University of the West Indies (Jamaica).
- Cheryl W. Honeycutt** (2013; 2011; 2013). Lecturer of Nursing. B.S.N., George Mason University; M.S.N., Old Dominion University.
- Lisa Horth** (2010; 2004). Associate Professor of Biological Sciences. B.S., M.S., University of Maryland - College Park; Ph.D., Florida State University.
- Gene J. W. Hou** (1995; 1983). Professor of Mechanical and Aerospace Engineering. B.S., National Cheng Kung University; M.S., National Taiwan University; Ph.D., The University of Iowa.
- Jennifer Leigh Hoyt** (2008; 2008). Lecturer of English. B.A., University of Texas at Tyler; M.A., Old Dominion University.
- Steve C. Hsiung** (2014; 2003). Professor of Engineering Technology. B.Ed., Kaohsiung Normal University (Taiwan); M.S., University of North Dakota; M.S., Kansas State University; Ph.D., Iowa State University.
- Fang Q. Hu** (2002; 1990). Professor of Mathematics and Statistics. B.S., M.S., Zhejiang University (China); Ph.D., Florida State University.
- Xiaoxiao Hu** (2012; 2012). Assistant Professor of Psychology. B.S., Peking University (China); M.A., Ph.D., George Mason University.
- Jen-Kuang Huang** (1996; 1985). Professor of Mechanical and Aerospace Engineering. B.S., National Taiwan University; M.S., Ph.D., Massachusetts Institute of Technology.
- Michael Hucles** (1995; 1990). Associate Professor of History. B.A., Swarthmore College; M.A., Virginia State University; Ph.D., Purdue University.
- Sylvia C. Hudgins** (2004; 1989). Professor of Finance. B.A., Virginia Polytechnic Institute and State University; M.B.A., Old Dominion University; Ph.D., Virginia Polytechnic Institute and State University.
- Donna K. Hughes-Oldenburg** (2013; 2002). Head of Bibliographic Services and Librarian IV. B.A., M.A., Hollins College.; M.L.I.S., University of California at Berkeley.
- Angelica J. Huizar** (2009; 2003). Associate Professor of Foreign Languages and Literatures. B.A., B.A., University of California at Irvine; M.A., Arizona State University; Ph.D., University of California at Irvine.
- Natalie Hutchinson** (2000; 1995). Senior Lecturer of Mathematics and Statistics. B.A., Catholic University of America; M.S., California State University at Fresno.
- Charles Hyde** (2002; 1993). Professor of Physics. B.A., University of California-San Diego; Ph.D., Massachusetts Institute of Technology. Designated as an Eminent Scholar.
- Wayne L. Hynes** (2006; 1995). Professor of Biological Sciences. B.Sc., Ph.D., Otago University (New Zealand).
- Khan M. Iftekharuddin** (2011; 2011). Professor of Electrical and Computer Engineering. B.S., Bangladesh Institute of Technology; M.S., Ph.D., University of Dayton.
- Luisa A. Igloria** (2010; 1998). Professor of English. B.A., University of the Philippines College; Ateneo de Manila University (Philippines); Ph.D., University of Illinois at Chicago.
- Linda Irwin-DeVitis** (2010; 2010). Professor of Teaching and Learning. B.S., University of Tennessee; M.Ed., University of New Orleans; Ed.D., University of Tennessee.
- Thomas L. Isenhour** (2000; 2000). Professor of Chemistry and Biochemistry. B.S., University of North Carolina at Chapel Hill; Ph.D., Cornell University.
- Isao Ishibashi** (1986; 1986). Professor of Civil and Environmental Engineering. B.S., M.S., Nagoya University (Japan); Ph.D., University of Washington, P.E.
- Denise Isabel** (2013; 2007). Senior Lecturer of Nursing. B.S.N., Villanova University; M.S.N., University of Texas Health Science Center at San Antonio.
- Katherine Jackson** (2010; 2002). Senior Lecturer of English. B.A., University of Virginia; M.F.A., Old Dominion University.
- Edward Jacobs** (2010; 1992). Professor of English. B.A., University of Tennessee-Knoxville; M.A., Ph.D., University of Illinois- Urbana-Champaign.
- Beth Ernst Jamali** (2002; 1997). Senior Lecturer of Physical Therapy and Athletic Training. B.S., Russell Sage College; M.S., Ph.D., Old Dominion University.
- Louis H. Janda** (1979; 1973). Associate Professor of Psychology. B.S., Colorado State University; A.M., Ph.D., Arizona State University.
- Hueiwang Jeng** (2010; 2004). Associate Professor of Community and Environmental Health. B.S., Kaohsiung Medical University (Taiwan); M.S.P.H., SC.D., Tulane University.
- Austin Jersild** (2001; 1995). Associate Professor of History. B.A., St. Olaf College; M.A., University of Michigan; Ph.D., University of California at Davis.
- Shuiwang Ji** (2010; 2010). Assistant Professor of Computer Science. M.S., Wuhan University of Science and Technology (China); Ph.D., Arizona State University.
- Chunqi Jiang** (2013; 2013). Associate Professor of Electrical and Computer Engineering. B.S., Changchun Institute of Optics and Fine Mechanics (China); University of Electronic Science and Technology of China; Ph.D., Old Dominion University.
- Qiu Jin** (2002; 1996). Associate Professor of History. B.A., M.A., Beijing Normal University (China); M.A., Ph.D., University of Hawaii.
- Karen C. Dunlap Joachim** (2013; 2013). Lecturer of Counseling and Human Services. B.A., University of Louisiana at Lafayette; M.S.Ed., M.S.Ed., Old Dominion University.
- Kavonia Hinton Johnson** (2010; 2004). Associate Professor of Teaching and Learning. B.S., M.A., North Carolina Agricultural and Technical University; Ph.D., The Ohio State University.
- Kaprea F. Johnson** (2011; 2011). Assistant Professor of Counseling and Human Services. B.A., Norfolk State University; M.Ed., Howard University; Ph.D., The Pennsylvania State University.
- Lynn S. Johnson** (2012; 2006). Senior Lecturer of Management. B.S.G.H.E., University of Delaware; M.H.R.M., Marymount University (Virginia).
- Andrea D. Jones** (2010; 2008; 2010). Lecturer of Mathematics and Statistics. B.S., Virginia Polytechnic Institute and State University; M.S., Ph.D., Old Dominion University.
- Cynthia M. Jones** (1998; 1993). Professor of Ocean, Earth, and Atmospheric Sciences. B.A., Boston University; M.S., Ph.D., University of Rhode Island. Designated as an Eminent Scholar.
- Elliott C. Jones** (1998; 1992). Associate Professor of Art. B.A., Norfolk State University; M.F.A., The Ohio State University.

- Richard Jones** (2009; 1994). Senior Lecturer of Engineering Technology. B.S., Oklahoma State University; M.S., United States Naval Postgraduate School.
- Sookyung Joo** (2010; 2010). Assistant Professor of Mathematics and Statistics. B.S., M.S., Ewha Womans University (South Korea); Ph.D., Purdue University.
- Erin L. Jordan** (2010; 2010). Associate Professor of History. B.A., Grinnell College; M.A., Ph.D., University of Iowa.
- Meagan M. Jordan** (2012; 2012). Associate Professor of Urban Studies and Public Administration. B.A., Austin College; M.P.A., University of Arkansas at Little Rock; Ph.D., University of Kentucky.
- Ravindra P. Joshi** (2001; 1989). Professor of Electrical and Computer Engineering. B.S., M.S., Indian Institute of Technology; Ph.D., Arizona State University. Designated as a University Professor and an Eminent Scholar.
- Sunil K. Joshi** (2013; 2013). Assistant Professor of Medical Diagnostic and Translational Sciences. B.S., K. R. College (India); B.V.S., D.V.M., GB Pant University of Agriculture and Technology (India); M.V.Sc., Indian Veterinary Research Institute; Ph.D., International Center for Genetic Engineering and Biotechnology (India).
- Vukica Jovanovic** (2012; 2012). Assistant Professor of Engineering Technology. M.S., University of Novi Sad (Serbia); Ph.D., Purdue University.
- Sharon L. Judge** (2007; 2006). Professor of Communication Disorders and Special Education. B.A., University of Arizona; M.Ed., North Texas State University; Ph.D., University of California at Santa Barbara.
- William Q. Judge, Jr.** (2006; 2006). Professor of Management and E. V. Williams Endowed Chair of Strategic Management. B.S., Lehigh University; M.B.A., Ph.D., University of North Carolina – Chapel Hill.
- Elaine M. Justice** (1985; 1979). Associate Professor of Psychology. B.S., Northern Kentucky University; A.M., Marshall University; Ph.D., University of Cincinnati. Designated as a University Professor.
- Vijay Kalburgi** (2007; 1999). Senior Lecturer of Information Technology/ Decision Sciences. B. Tech., Karnataka Regional Engineering College; M.E., Ph.D., Old Dominion University.
- Hideaki Kaneko** (1991; 1986). Professor of Mathematics and Statistics. B.S., College of Charleston; M.S., Ph.D., Clemson University.
- Kiran Karande** (2008; 1996). Associate Dean of Executive Programs and External Affairs, Strome College of Business and Professor of Marketing. B.S., M.B.A., University of Bombay (India); Ph.D., University of Houston.
- Charity Karcher** (2009; 2009). Health Sciences Reference Librarian and Librarian II. B.A., Eckerd College; M.L.I.S., University of South Carolina.
- Karen Anne Karłowicz** (2009; 1997). Associate Professor of Nursing. B.S., Johns Hopkins University; M.S.N., Catholic University of America; Ed.D., Nova Southeastern University.
- Aaron Karp** (2011; 2005). Senior Lecturer of Political Science and Geography. B.A., Drury College; M.A., M.Phil., Columbia University.
- Regina C. Karp** (1993; 1993). Associate Professor of International Studies. B.A., University of Keele (U.K.); Ph.D., University of Lancaster (U.K.).
- Andrey Kasparov** (2014; 1997). Professor of Music. M.M. (Piano), M.M. (Composition), Moscow State Conservatory (Russia); D.M., Indiana University.
- Petros J. Katsioloudis** (2013; 2008). Associate Professor of STEM Education and Professional Studies. B.S., M.S., California University of Pennsylvania; Ed.D., North Carolina State University.
- Janet E. Katz** (1984; 1979). Associate Dean of the College of Arts and Letters and Associate Professor of Sociology and Criminal Justice. A.B., Kalamazoo College; A.M., Ph.D., State University of New York at Albany.
- Charles B. Keating** (2006; 1994). Professor of Engineering Management and Systems Engineering. B.S., United States Military Academy; M.A. Central Michigan University; Ph.D., Old Dominion University.
- John F. Keeling, Jr.** (2001; 1992). Senior Lecturer of Management. B.S., M.B.A., Virginia Polytechnic Institute and State University.
- Michelle L. Kelley** (2000; 1988). Professor of Psychology. B.S., M.S., University of Oklahoma; Ph.D., University of Houston.
- Betsy Kennedy** (2000; 1993). Senior Lecturer of Human Movement Sciences. B.S., West Chester University; M.Ed., Temple University. Designated as a University Distinguished Teacher.
- Katharine Clark Kersey** (1983; 1969). Professor of Teaching and Learning. A.B., Westhampton College; M.S.Ed., Old Dominion College; Ph.D., University of Virginia. Designated as a University Professor.
- James S. Key** (2008; 1998). Lecturer of Management. B.S., Virginia Military Institute; M.B.A., University of Virginia.
- Jennifer Kidd** (2014; 2007) Senior Lecturer of Teaching and Learning. B.A., University of Illinois at Chicago; M.S.Ed., Ph.D., Old Dominion University.
- Timothy C. Kidd** (2006; 2006). Lecturer of Political Science and Geography. B.A., M.A., University of Alabama.
- Paul S. Kim** (2013; 2013). Assistant Professor of Music. B.S., M.A., University of Virginia; M.M., University of Maryland - College Park; D.M.A., Shenandoah Conservatory.
- Sue Crownfield Kimmel** (2010; 2010). Assistant Professor of Teaching and Learning. B.S., Guilford College; M.S.L.S., University of North Carolina at Chapel Hill; Ph.D., University of North Carolina at Greensboro.
- Amanda Kinzer** (2007; 2001). Associate Professor of Communication and Theatre Arts. B.A., University of North Carolina at Chapel Hill; M.F.A., University of North Carolina at Greensboro.
- Amy M. Kitts** (2012; 2012). Lecturer of Engineering Technology. B.S., M.S., Virginia Polytechnic Institute and State University; P.E.
- Nancy K. Klein** (2014; 1986). Professor of Music. B.A., University of Richmond; M.M.Ed., Eastern Kentucky University; Ph.D., New York University. Designated as a University Professor.
- John M. Klinck** (1996; 1989). Professor of Ocean, Earth, and Atmospheric Sciences. B.S., Clemson University; M.S., University of North Carolina; Ph.D., North Carolina State University.
- Ryan L. Klinger** (2011; 2011). Assistant Professor of Management. B.S., M.S., Ph.D., University of Florida.
- Stephen E. Knott** (2012; 2006). Senior Lecturer of Human Movement Sciences. B.S., Old Dominion University; M.A., Norfolk State University.
- Lee Ellen Knight** (2013; 2013). Lecturer of Women's Studies. B.A., Goucher College; M.A., Old Dominion University.
- James V. Koch** (1990; 1990). Board of Visitors Professor of Economics and President Emeritus. B.A., Illinois State University; Ph.D., Northwestern University.
- Michael Ganyu Kong** (2012; 2012). Professor of Electrical and Computer Engineering. B.Sc., M.Sc., Zhejiang University (China); Ph.D., University of Liverpool (United Kingdom).
- Ann Marie Kopitzke** (2010; 2008; 2010). Lecturer of Community and Environmental Health. B.B.A., University of Wisconsin – Milwaukee; M.P.A., Ph.D., Old Dominion University.
- Lisa Koperna** (2012; 2012). Clinic Director/Lecturer of Physical Therapy and Athletic Training. B.S., M.S.Ed., Old Dominion University; M.P.T., D.P.T., Shenandoah University.

**Michael F. Kosloski, Jr.** (2011; 2007). Assistant Professor of STEM Education and Professional Studies. B.S., M.S.Ed., Ph.D., Old Dominion University.

**James Kosnik** (2002; 1982). Professor of Music. B.F.A., M.A., State University of New York at Buffalo; D.M.A., Eastman School of Music of the University of Rochester. Designated as a University Professor.

**Miltiadis Kotinis** (2014; 2008). Associate Professor of Mechanical and Aerospace Engineering. Diploma, National Technical University of Athens (Greece); M.S.E., Ph.D., University of Michigan.

**Karen Kott** (2006; 2006). Associate Professor of Physical Therapy and Athletic Training. B.S., State University of New York at Buffalo; M.S., State University College at Buffalo; Ph.D., State University of New York at Buffalo.

**Sridharan Krishnaswami** (2008; 2008). Lecturer of Marketing. M.A., University of Madras (India); M.B.A., The College of William and Mary.

**John E. Kroll** (1981; 1976). Associate Professor of Mathematics and Statistics. B.S., M.S., University of California, Los Angeles; Ph.D., Yale University.

**Dean J. Krusienski** (2010; 2010). Associate Professor of Electrical and Computer Engineering. B.S., M.S., Ph.D., The Pennsylvania State University.

**Terry Kubichan** (2005; 1996). Senior Lecturer of Accounting. B.S., M.S., Old Dominion University; CPA, CMA. Designated as a University Distinguished Teacher.

**Sebastian Kuhn** (2003; 1992). Professor of Physics. Vordiplom (B.S.), University of Dusseldorf (Germany); Diplom (M.S.), Ph.D., University of Bonn (West Germany). Designated as an Eminent Scholar.

**Sandeep Kumar** (2010; 2010). Assistant Professor of Civil and Environmental Engineering. B.S., Bihar Institute of Technology (India); Ph.D., Auburn University.

**Heather M. Kunkel** (2010; 2002). Senior Lecturer of Mathematics and Statistics. B.S., M.S.Ed., Old Dominion University.

**Vishnukumar K. Lakdawala** (1989; 1983). Associate Professor of Electrical and Computer Engineering. B.E., Bangalore University; M.E., Indian Institute of Sciences; Ph.D., University of Liverpool (U.K.).

**Donald R. Lam** (2013; 2013). Visiting Assistant Professor of Political Science and Geography. B.B.A., Pennsylvania State University; J.D., University of Baltimore; M.A., Old Dominion University.

**Lee C. Land** (2011; 2004). Senior Lecturer of Mathematics and Statistics. B.S., M.S., Old Dominion University.

**Rafael Landaeta** (2009; 2003). Associate Professor of Engineering Management and Systems Engineering. B.S., Central Technological University (Venezuela); M.S., Ph.D., University of Central Florida.

**Amy K. Landers** (2012; 2010; 2012). Lecturer of Psychology. B.A., Mount Holyoke College; Ph.D., University of Minnesota - Twin Cities.

**Richard N. Landers** (2009; 2009). Assistant Professor of Psychology. B.A., University of Tennessee- Knoxville; Ph.D., University of Minnesota – Twin Cities.

**Drew Landman** (2010; 1987). Professor of Mechanical and Aerospace Engineering. B.S., M.S., M.E., Lehigh University; Ph.D. Old Dominion University; PE.

**Mark A. Lane** (2011; 2011). Associate Professor of Finance. B.B.A., M.B.A., University of Central Arkansas; Ph.D., University of Missouri - Columbia.

**Philip J. Langlais** (2003; 2003). Professor of Psychology. B.A., Salem State College; M.A., University of Texas Medical Branch at Galveston; Ph.D., Northeastern University.

**Stephen E. Lanivich** (2012; 2012). Assistant Professor of Management. B.B.A., M.A., Walsh College of Business; Ph.D., Florida State University.

**James H. Lant** (2012; 2005; 2012) Instructor of Management. B.S., M.B.A., M.P.A., Old Dominion University.

**John D. Lape** (2008; 2008). Lecturer of Information Technology and Decision Sciences. B.S., Purdue University; M.S., U.S. Naval Postgraduate School.

**Mounir Laroussi** (2008; 2002). Professor of Electrical and Computer Engineering. B.S., Technical University of Sfax (Tunisia); M.S., National School of Radio-Electricity (France); Ph.D., University of Tennessee - Knoxville.

**David G. Lasseigne** (1991; 1985). Associate Professor of Mathematics and Statistics. B.S., Washington University; Ph.D., Northwestern University.

**Louis Steven Latham** (2003; 2003). Instructor of Music. B.A., Old Dominion University; M.A., University of Virginia.

**Cathy Lau-Barraco** (2009; 2009). Assistant Professor of Psychology. B.A., M.S., Ph.D., University of Central Florida.

**Carolyn J. Lawes** (2001; 1993). Associate Professor of History. B.A., University of Santa Clara; M.A., Ph.D., University of California-Davis.

**Roland W. Lawrence** (2012; 2006). Associate Professor of Engineering Technology. B.S., M.S., Old Dominion University; Ph.D., North Carolina State University.

**Christopher Lawton** (2014; 2014). Science Reference Services Librarian and Librarian I. B.A., Franklin Pierce University; M.S.L.I.S., Syracuse University.

**James F. Leathrum** (2002; 1992). Associate Professor of Modeling, Simulation and Visualization Engineering. B.S., M.S., Ph.D., Duke University.

**William Leavitt** (1999; 1992). Associate Professor of Urban Studies and Public Administration. B.A., Washington Square College, New York University; M.P.A., Ph.D., University of Colorado.

**Amy H. Lee** (2007; 2001; 2004). Senior Lecturer of Nursing. B.S.N., Niagara University; M.S.N., University of Virginia.

**Guang-Lea Lee** (2004; 1996). Associate Professor of Teaching and Learning. B.H.E., University of Suwon (South Korea); M.S., Chicago State University; Ph.D., University of Minnesota.

**James Weifu Lee** (2010; 2010). Associate Professor of Chemistry and Biochemistry. M.S., Ph.D., Cornell University.

**Soo-Hoon Lee** (2010; 2004). Associate Professor of Management. B.B.A., National University of Singapore; Ph.D., University of Washington.

**Lorraine Mary Lees** (2007; 1979). Professor of History. A.B., Holy Family College (Pennsylvania); A.M., University of Wisconsin at Milwaukee; Ph.D., The Pennsylvania State University. Designated as a University Professor.

**Shyla R. Lefever** (2013; 2013). Lecturer of Communication and Theatre Arts. B.S., Liberty University; M.A., Ph.D., Regent University.

**Jonathan I. Leib** (2008; 2008). Associate Professor of Political Science and Geography. B.A., Mary Washington College; M.A., Ph.D., Syracuse University.

**Margaret F. Lemaster** (2008; 2008). Assistant Professor of Dental Hygiene. B.S., M.S., Old Dominion University.

**Jonathan M. Lester** (2011; 2011). Lecturer of Engineering Technology. B.S., Virginia Military Institute; M.S., Ph.D., West Virginia University; PE.

**Kathleen Levingston** (2011; 2008). Assistant Professor of Counseling and Human Services. B.A., M.Ed., University of Louisiana at Monroe; Ph.D., University of New Orleans.

- Irwin Benjamin Levinstein** (2005; 1974). Associate Professor of Computer Science. A.B., University of Chicago; A.M., University of Pittsburgh; M.S., Old Dominion University; Ph.D., University of Chicago.
- Robin J. Lewis** (1998; 1984). Professor of Psychology. Sc.B., Brown University; M.A., Ph.D., University of Kansas.
- Jiang (John) Li** (2012; 2006). Associate Professor of Electrical and Computer Engineering. B.S., Shanghai Jiao Tong University (China); M.S., Tsinghua University (China); Ph.D., University of Texas at Arlington.
- Ling Xia (Lynn) Li** (2007; 2001). Professor of Information Technology/Decision Sciences. B.A., Shanghai Normal University (China); M.B.A., University of Alaska; M.B.A., Ph.D., Ohio State University.
- Shaomin Li** (2005; 2002). Professor of Management. B.A., Peking University (China); Ph.D., Princeton University. Designated as an Eminent Scholar.
- Yaohang Li** (2010; 2010). Associate Professor of Computer Science. B.S., South China University of Technology; M.S., Ph.D., Florida State University.
- Feng Lian** (2010; 2010). Instructor of Economics. B.S., M.S., University of Electronic Sciences and Technology (China); M.A., Old Dominion University.
- Alison Crowell Lietzenmayer** (2009; 2009). Lecturer of Communication and Theatre Arts. B.A., M.A., Old Dominion University.
- Cheng Y. Lin** (2008; 1989). Professor of Engineering Technology. B.S., M.S., National Cheng-Kung University (Taiwan); Ph.D., Texas A&M University.
- Hutson H. Lindner** (2013; 2002; 2008). Senior Lecturer of Mathematics and Statistics. B.S., United States Naval Academy; M.S.Ed., Old Dominion University.
- Hua Liu** (2014; 2007). Associate Professor of Political Science and Geography. B.A., M.A., Wuhan Technical University of Surveying and Mapping (China); Ph.D., Indiana State University.
- Yating Liu** (2013; 2013). Assistant Professor of STEM Education and Professional Studies. B.S., Peking University (China); M.S., Ph.D., Ohio State University.
- Yuping Liu-Thompkins** (2013; 2002). Professor of Marketing. B.A., Renmin University of China; Ph.D., Rutgers University.
- Tatyana A. Lobova** (2014; 2007). Senior Lecturer of Biological Sciences. M.S., St. Petersburg State University (Russia); Ph.D., Komarov Botanical Institute, Russian Academy of Sciences.
- Elizabeth F. Locke** (1999; 1994). Senior Lecturer of Physical Therapy and Athletic Training. B.S., Medical College of Virginia; M.S., Ph.D., Old Dominion University.
- John R. Lombard** (2007; 1998). Associate Professor of Urban Studies and Public Administration. B.S., University of Miami; M.A., Ph.D., State University of New York at Buffalo.
- Jonathan W. Lopez** (2010; 2010). Lecturer of Sociology and Criminal Justice. B.A., Christopher Newport University; M.A., Old Dominion University.
- Drew J. Lopenzina** (2012; 2012). Assistant Professor of English. B.A., University of Massachusetts - Amherst; M.A., Ph.D., University of New Hampshire.
- Jonathan W. Lopez** (2013; 2010; 2013). Lecturer of Sociology and Criminal Justice. B.A., Christopher Newport University; M.A., Old Dominion University.
- Yoshie Saito Lord** (2012; 2012). Assistant Professor of Accounting. B.A., Nihon University; M.B.A., Georgia College; M.S., University of Georgia; Ph.D., Temple University.
- Kimberly A. Lott** (2009; 2009). Lecturer of Nursing. A.S., Florida Community College at Jacksonville; B.S.N., California State University – Dominguez Hills; M.S.N., Old Dominion University.
- Frederick A. Lubich** (1997; 1997). Professor of Foreign Languages and Literatures. B.A. University of Stuttgart (Germany); M.A., University of Heidelberg (Germany); M.A., Cornell University; Ph.D., University of California at Santa Barbara.
- Robert A. Lucking** (1989; 1984). Professor of Teaching and Learning. B.S., M.S., Ph.D., University of Nebraska.
- Nathan Luetke** (2011; 2005). Senior Lecturer of Engineering Technology. B.S., M.S., Old Dominion University. Designated as a University Distinguished Teacher.
- Li-Shi Luo** (2009; 2004). Professor of Mathematics and Statistics. B.Eng., Fuzhou University (China); M.Sc., The University of Western Ontario; Ph.D., Georgia Institute of Technology.
- Rachel Ann Lux** (2013; 2013). Instructional Services Librarian and Librarian I. B.A., Augustana College; M.S., Boston University; M.L.I.S., University of Illinois at Urbana-Champaign.
- James Lyden** (2013; 2013). Lecturer of Communication and Theatre Arts. B.A., St Michaels College; M.F.A., Utah State University.
- Aundrea L. Lyons** (2011; 2011). Lecturer of Human Movement Sciences. B.S., Florida State University; M.S., Mississippi State University; Ph.D., Florida State University.
- Gangfeng Ma** (2012; 2012). Assistant Professor of Civil and Environmental Engineering. B.S., M.S., Tongji University (China); Ph.D., University of Delaware.
- Bharat B. Madan** (2012; 2012). Professor of Modeling, Simulation and Visualization Engineering. B.E., Birla Institute of Technology and Science (India); M.Tech., Ph.D., Indian Institute of Technology.
- Timothy M. Madden** (2012; 2012). Assistant Professor of Management. B.B.A., M.B.A., James Madison University; Ph.D., University of Tennessee - Knoxville.
- Poornima Madhavan** (2013; 2007). Associate Professor of Psychology. B.A., Bangalore University (India); M.A., Bharathiar University (India); M.A., Ph.D., University of Illinois at Urbana-Champaign.
- Scott R. Maggard** (2014; 2008). Associate Professor of Sociology and Criminal Justice. B.A., University of Central Florida; M.A., Ph.D., University of Florida.
- George C. Maihafer** (1988; 1982). Associate Professor of Physical Therapy and Athletic Training. B.S., State University of New York - Syracuse; M.S., University of Kentucky; Ph.D., Old Dominion University.
- Debra A. Major** (2005; 1992). Professor of Psychology. B.A., M.A., Ph.D., Michigan State University. Designated as an Eminent Scholar.
- Vijay Mali** (2012; 2012). Instructor of Marketing. B. Commerce; M.B.A., University of Bombay (India); M.S., Virginia Commonwealth University.
- David Mallin** (2013; 2013). Assistant Professor of Communication and Theatre Arts. B.A., The American University; M.F.A., The American Film Institute.
- Muhammad Arif Malik** (2009; 2009). Research Assistant Professor, Frank Reidy Research Center for Bioelectronics. B.Sc., F.Sc., FG Science Degree College, Wah Cantt (Pakistan); M.Sc., M.Phil., Quaid-I-Azam University; Ph.D., Zhejiang University (China).
- Chondra K. Malson** (2013; 2013). Lecturer of Communication Disorders and Special Education. B.S., James Madison University; M.Ed., Georgia State University; C.A.G.S., Regent University.
- Kurt J. Maly** (1985; 1985). Professor of Computer Science and Kaufman Professor of Computer Science. Diplom Ingenieur, Technische Universität

(Austria); M.S., Ph.D., New York University. Designated as an Eminent Scholar.

**Manveer Gaur Mann** (2012; 2012). Assistant Professor of STEM Education and Professional Studies. B.Tech., Punjab Technical University (India); M.S., University of Georgia; Ph.D., Auburn University.

**M. Lee Manning** (1998; 1992). Professor of Teaching and Learning. B.A., M.Ed., Clemson University; Ph.D., University of South Carolina. Designated as an Eminent Scholar.

**Carol Leleer Mansyur** (2011; 2011). Assistant Professor of Community and Environmental Health. B.S., M.A., University of Houston; Ph.D., University of Texas School of Public Health.

**Jingdong Mao** (2012; 2006). Associate Professor of Chemistry and Biochemistry. B.Sc., M.Sc., Nanjing Agricultural University (China); Ph.D., University of Massachusetts at Amherst.

**Mira H. Mariano** (2002; 1997). Senior Lecturer of Physical Therapy and Athletic Training. B.S., University of Pittsburgh; M.S., Ph.D., Old Dominion University.

**Edward P. Markowski** (1995; 1980-85; 1989). Professor of Information Technology/Decision Sciences. B.S., King's College (Pennsylvania); Ph.D., Pennsylvania State University. Designated as a University Professor.

**Marilyn Frances Marloff** (1993; 1987). Associate Professor of Communication and Theatre Arts. B.F.A., M.F.A., University of Oklahoma.

**Mary E. Marshall** (2012; 2003). Senior Lecturer of Philosophy and Religious Studies. B.A., Old Dominion University; M.F.A., University of Arizona; M.A., Ph.D., University of Virginia.

**Erika Marsillac** (2010; 2010). Assistant Professor of Information Technology/Decision Sciences. B.A., The Pennsylvania State University; M.B.A., Goldey Beacom College; Ph.D., University of Toledo.

**Sylvain Marsillac** (2013; 2010). Professor of Electrical and Computer Engineering. B.S., M.S., Ph.D., University of Nantes (France).

**Jamela M. Martin** (2013; 2013). Lecturer of Nursing. B.A., North Carolina State University; B.S.N., M.S.N., University of Virginia.

**Jessica R. Mayo** (2013; 2013). Lecturer of Nursing. B.S.N., George Mason University; M.S.N., Old Dominion University.

**Claudia A. Mazur** (2011; 2011). Lecturer of English. B.A., Hunter College, City University of New York; M.A., Bucknell University; M.F.A., Old Dominion University.

**Garrett J. McAuliffe** (2004; 1988). Professor of Counseling and Human Services. B.A., City University of New York - Queens College; M.S., State University of New York-Albany; Ph.D., University of Massachusetts. Designated as a University Professor.

**Shannon M. McCallister** (2013; 2013). Lecturer of Biological Sciences. B.S., Virginia Polytechnic Institute and State University; M.S., Old Dominion University.

**Gayle McCombs** (2010; 1998). Professor of Dental Hygiene. A.S., Florida Community College at Jacksonville; B.S., University of West Florida; M.S., University of North Carolina at Chapel Hill. Designated as a University Professor.

**John R. McConaughy** (1988; 1980). Associate Professor of Ocean, Earth, and Atmospheric Sciences. B.S., University of Miami (Coral Gables); Ph.D., University of Southern California.

**Pinky A. McCoy** (2013; 2001). Senior Lecturer of Chemistry and Biochemistry. B.S., Philadelphia College of Pharmacy and Science; Ph.D., Old Dominion University and Eastern Virginia Medical School.

**Frederic D. McKenzie** (2011; 1999). Professor of Modeling, Simulation and Visualization Engineering. B.S., M.S., Ph.D., University of Central Florida.

**Sueanne E. McKinney** (2010; 1998; 2005). Associate Professor of Teaching and Learning. B.A., University of North Carolina at Wilmington; M.S.Ed., Ph.D., Old Dominion University.

**Megan McKittrick** (2011; 2011). Instructor of English. B.A., California State University - Fresno; M.A., Old Dominion University.

**John McManus** (2014; 2008). Associate Professor of English. B.A., Goucher College; M.A., Hollins University; M.F.A., University of Texas at Austin.

**Michael K. McShane** (2013; 2007). Associate Professor of Finance. B.S., University of New Mexico; M.B.A., Western Kentucky University; Ph.D., University of Mississippi.

**Gordon Melrose** (1990; 1984). Associate Professor of Mathematics and Statistics. B.Sc., University of Glasgow; M.S., Ph.D., Old Dominion University.

**Walter Lee Melvin** (2011; 2011). Dentist/Lecturer of Dental Hygiene. B.S., University of Kentucky; D.M.D., University of Louisville.

**Marie M. Melzer** (2010; 2010). Lecturer of Chemistry and Biochemistry. B.S., University of North Carolina - Charlotte; Ph.D., Georgetown University.

**Berhanu Mengistu** (2000; 1985). Professor of Urban Studies and Public Administration. B.A., Walla Walla College; M.P.A., University of Arizona; Ph.D., University of Delaware.

**Jane T. Merritt** (2002; 1995). Associate Professor of History. B.A., M.A., Ph.D., University of Washington.

**David Metzger** (2004; 1993). Dean of the Honors College and Professor of English. B.A., M.A., Emporia State University; Ph.D., University of Missouri.

**Jennifer Grimsley Michaeli** (2012; 2012). Assistant Professor of Engineering Technology. B.S., Webb Institute of Naval Architecture; M.S., Massachusetts Institute of Technology; Ph.D., Old Dominion University; PE.

**Anne M. P. Michalek** (2014; 2013). Assistant Professor of Communication Disorders and Special Education. B.S., M.S.Ed., Ph.D., Old Dominion University.

**Roland R. Mielke** (1987; 1975). Professor of Modeling, Simulation and Visualization Engineering. B.S., M.S., Ph.D., University of Wisconsin at Madison. Designated as a University Professor.

**Dale E. Miller** (2011; 1999). Professor of Philosophy and Religious Studies. B.A., Wichita State University; M.A., M.A., Ph.D., University of Pittsburgh.

**Linda Miller-Dunleavy** (2006; 1998). Senior Lecturer of Communication Disorders and Special Education. B.S., M.S.Ed., Old Dominion University.

**Katrina L. Miller-Stevens** (2010; 2010). Assistant Professor of Urban Studies and Public Administration. B.A., Colorado State University; M.N.M.; Regis University; Ph.D., University of Colorado - Denver.

**Tammi F. Milliken** (2012; 2005). Associate Professor of Counseling and Human Services. B.S., M.S.Ed., Old Dominion University; Ph.D., The College of William and Mary.

**Douglas J. Mills** (2014; 2007). Senior Lecturer of Biological Sciences. B.S., Virginia Polytechnic Institute and State University; M.S., University of Virginia; Ph.D., University of Maryland - College Park.

**Jessica Mirasol** (2013; 2009). Librarian Archivist for Music Collections and Librarian II. B.S., Indiana University/Purdue University - Ft. Wayne; M.L.I.S., University of Pittsburgh.

**Anna M. Mirkova** (2010; 2010). Assistant Professor of History. B.A., Lawrence University; M.A., Ph.D., University of Michigan - Ann Arbor.

**Shelley C. Mishoe** (2011; 2011). Dean of the College of Health Sciences and Professor of Community and Environmental Health. A.A.S., B.S.,

SUNY Upstate Medical University; M.Ed., Augusta State University; Ph.D., University of Georgia.

**Kevin A. Moberly** (2014; 2009). Associate Professor of English. B.A., Berry College; M.A., Ph.D., University of Louisiana at Lafayette.

**Jeffrey Moe** (2013; 2013). Assistant Professor of Counseling and Human Services. B.S., Ohio State University; M.A., Ph.D., University of Toledo.

**Janet M. Moloney** (2013; 2012). Lecturer of Chemistry and Biochemistry. B.Sc., London Metropolitan University (United Kingdom); Ph.D., University of Durham (United Kingdom); D.V.M., University College Dublin (Ireland).

**Elizabeth Monk-Turner** (1999; 1986). Professor of Sociology and Criminal Justice. B.A., George Mason University; M.A., The College of William and Mary; Ph.D., Brandeis University.

**Emily R. Moore** (2013; 2010; 2013). Instructor of History. B.A., North Carolina State University; M.A., The College of William and Mary.

**Kenneth Mopper** (2000; 2000). Professor of Chemistry and Biochemistry. B.A., Queens College, City University of New York; M.S., Massachusetts Institute of Technology; Ph.D., Massachusetts Institute of Technology/Woods Hole Oceanographic Institute. Joint appointment with the Department of Ocean, Earth, and Atmospheric Sciences.

**Mohammadreza Moradi** (2013; 2013). Lecturer of Civil and Environmental Engineering. B.Sc., Iran University of Science and Technology; M.Sc. Sharif University of Technology (Iran); Ph.D., University of Massachusetts - Amherst.

**Pamela D. Morgan** (1987; 1987). Collection Development Officer and Librarian II. B.A., North Carolina State University; M.S.L.S., University of North Carolina-Chapel Hill.

**Sara N. Morgan** (2013; 2013). Lecturer of English. B.A., M.A., Old Dominion University.

**Jay D. Morris** (2006; 1998). Senior Lecturer of Computer Science. B.A., University of Missouri-Kansas City; M.S., M.Phil., Yale University.

**John C. Morris** (2009; 2002). Professor of Urban Studies and Public Administration. B.A., M.A., Ph.D., Auburn University.

**Sara A. Morris** (1995; 1989). Associate Professor of Management. B.A., M.B.A., Ph.D., University of Texas-Austin.

**Gary R. Morrison** (2004; 2004). Professor of STEM Education and Professional Studies. B.S., Ed.D., Indiana University - Bloomington.

**Steven Morrison** (2012; 2007). Professor of Physical Therapy and Athletic Training and Batten Professor of Health Sciences. B.Sc., B.PhEd., M.PhEd., Otago University (New Zealand); Ph.D., The Pennsylvania State University.

**Suzanne F. Morrow** (2014; 2006). Senior Lecturer of Psychology. B.A., Auburn University; M.S., Old Dominion University.

**Manuela Mourao** (2013; 1994; 1997). Professor of English. Licenciatura, University of Porto (Portugal); M.A., Eastern Illinois University; Ph.D., University of Illinois - Urbana-Champaign.

**Katherine A. Moulton** (2013; 2011). Lecturer, English Language Center. B.A., Macalester College; M.A., University of Michigan.

**Moustafa R. Moustafa** (1985; 1979). Associate Professor of Engineering Technology. B.S., Higher Industrial Institute (Egypt); M.S. (Mechanical Engineering), M.S. (Aeronautical and Astronautical Engineering), University of Illinois.

**Ravi Mukkamala** (2002; 1987). Associate Dean of the College of Sciences and Professor of Computer Science. B.E., Osmania University (India); M.Tech., Indian Institute of Technology (India); Ph.D., University of Iowa.

**Margaret K. Mulholland** (2012; 2000). Professor of Ocean, Earth, and Atmospheric Sciences. B.S., University of Notre Dame; M.S., M.M.A., University of Washington; Ph.D., University of Maryland.

**Anne H. Muraoka** (2011; 2011). Assistant Professor of Art. B.A., University of Hawaii at Manoa; M.A., Syracuse University; Ph.D., Temple University.

**Debra Murray** (2010; 2010). Lecturer of Nursing. B.S.N., The Pennsylvania State University; M.H.R., University of Oklahoma; M.S.N., University of Virginia.

**Susan L. Murray** (2009; 2003). Senior Lecturer of Nursing. B.S.N., M.S.N., Old Dominion University.

**Lytton J. Musselman** (1985; 1973). Professor of Biological Sciences and the Mary Payne Hogan Professor of Botany. A.B., Beloit College; M.S., University of Wisconsin; Ph.D., University of North Carolina. Designated as Eminent Scholar.

**Randolph R. Myers** (2012; 2012). Assistant Professor of Sociology and Criminal Justice. B.A., M.A., Ph.D., University of California - Irvine.

**Steven P. Myran** (2014; 2008). Associate Professor of Educational Foundations and Leadership. B.F.A., College for Creative Studies; M.Ed., Lesley College; Ph.D., Virginia Commonwealth University.

**Bismarck Myrick** (2008; 2008). Ambassador in Residence and Lecturer of Political Science and History. B.A., University of Tampa; M.A., Syracuse University.

**Tamer Nadeem** (2010; 2010). Assistant Professor of Computer Science. B.Sc., M.Sc., Alexandria University (Egypt); M.Sc., Ph.D., University of Maryland - College Park.

**Anil Nair** (2011; 1997). Professor of Management. B.E., Government Engineering College (India); M.Tech., Indian Institute of Technology; M.Phil., Ph.D., New York University.

**Mohammad S. Najand** (1999; 1987). Professor of Finance. B.A., College of Economics and Social Sciences (Iran); M.A., M.B.A., Ph.D., Syracuse University.

**Gon Namkoong** (2012; 2007). Associate Professor of Electrical and Computer Engineering. B.S., Chonbuk National University (South Korea); M.S., Ph.D., Georgia Institute of Technology.

**Anthony W. Nattania** (2013; 2013). Lecturer of Philosophy and Religious Studies. B.A., B.S., M.A., Old Dominion University.

**Valentina Neblitt-Jones** (2012; 2012). Head, Systems Development and Librarian I. B.A., Virginia Polytechnic Institute and State University; B.S., Old Dominion University; M.S.L.I.S., Florida State University.

**Brian Nedvin** (2010; 2010). Assistant Professor of Music. B.M., Bucknell University; M.M., Eastman School of Music; D.M.A., University of North Texas.

**Girish Neelakanta** (2012; 2012). Assistant Professor of Biological Sciences. B.Sc., M.Sc., Bangalore University (India); Ph.D., University of Cologne (Germany).

**James A. Neff** (2004; 2004). Professor of Community and Environmental Health. B.S., Virginia Polytechnic Institute and State University; M.P.H., University of Texas Health Science Center School of Public Health at Houston; M.S., Ph.D., Florida State University.

**Michael L. Nelson** (2008; 2002). Associate Professor of Computer Science. B.S., Virginia Polytechnic Institute and State University; M.S., Ph.D., Old Dominion University.

**Kneeland K. Nesius** (1982; 1973). Associate Professor of Biological Sciences. B.S., M.S., Purdue University; Ph.D., University of Oklahoma. Designated as a University Professor.

**Edward S. Neukrug** (2000; 1989). Professor of Counseling and Human Services. B.A., SUNY-Binghamton; M.S., Miami University; Ed.D., University of Cincinnati. Designated as a University Professor.

**Tara L. Newcomb** (2011; 2010). Assistant Professor of Dental Hygiene. B.S.D.H., M.S.D.H., Old Dominion University.

- Brett A. Newman** (2007; 1993). Professor of Mechanical and Aerospace Engineering. B.S., M.S., Oklahoma State University; Ph.D., Purdue University; PE.
- ManWo NG** (2011; 2011). Assistant Professor of Modeling, Simulation and Visualization Engineering. B.Sc., M.Sc., Delft University of Technology (Netherlands); M.S., Ph.D., University of Texas – Austin.
- Duc Thai Nguyen** (1996; 1985). Professor of Civil and Environmental Engineering. B.S., Northeastern University; M.S., University of California at Berkeley; Ph.D., University of Iowa.
- Kyle H. Nicholas** (2013; 2000). Senior Lecturer of Communication and Theatre Arts. B.A., California State University - Fresno; M.A., University of Washington; Ph.D., University of Texas - Austin.
- Chila N. Nicholson** (2009; 2009). Lecturer of Communication Disorders and Special Education. B.S., M.S.Ed., Old Dominion University.
- Richard J. Nickel** (2007; 2002). Associate Professor of Art. A.S., Monroeville Community College; B.S., State University College at Buffalo; M.F.A., Edinboro University of Pennsylvania.
- Nora Noffke** (2007; 2001). Associate Professor of Ocean, Earth, and Atmospheric Sciences. Diploma, University of Tübingen (Germany); Ph.D., University of Oldenburg (Germany).
- Andrea J. Nolan** (2012; 2012). Lecturer of English. B.A. Washington College; M.F.A., Old Dominion University.
- Ahmed K. Noor** (2000; 2000). Professor of Modeling, Simulation and Visualization Engineering. B.S., Cairo University (Egypt); M.S., Ph.D., University of Illinois at Urbana-Champaign; PE. Designated as an Eminent Scholar.
- Richard D. Noren** (1991; 1985). Associate Professor of Mathematics and Statistics. B.S., University of Connecticut; Ph.D., Virginia Polytechnic Institute and State University.
- John A. Nunnery** (2013; 2001). Professor of Educational Foundations and Leadership and Executive Director of the Center for Educational Partnerships. B.A., Rhodes College; M.A.T., Ed.D., The University of Memphis.
- Roy C. Ogle** (2012; 2012). Professor of Medical Diagnostic and Translational Sciences. B.A., Ph.D., University of Virginia.
- Robin Leigh Ormiston** (2013; 2013). Lecturer of Women's Studies. A.A., Northampton Community College; B.S., Norfolk State University; M.A., Old Dominion University.
- Stephan Olariu** (1998; 1986). Professor of Computer Science. M.Sc., Timisoara University (Romania); M.Sc., Ph.D., McGill University (Canada).
- Daniel E. O'Leary** (2011; 2006). Senior Lecturer of Sociology and Criminal Justice. B.A., The Evergreen State College; M.A., The American University; Ph.D., Syracuse University.
- Emilia S. Oleszak** (2007; 2007). Associate Professor of Biological Sciences. B.S., M.S., Medical School of Wroclaw (Poland); Ph.D., Hirsfeld Institute of Immunology and Experimental Therapy, Polish Academy of Science.
- Matthew Oliver** (2010; 2003). Senior Lecturer of English. B.A., M.F.A., Old Dominion University.
- Timothy J. Orr** (2010; 2010). Assistant Professor of History. B.S., B.A., Gettysburg College; M.A., Ph.D., The Pennsylvania State University.
- Christopher James Osgood** (1990; 1986). Associate Professor of Biological Sciences. A.B., Ph.D., Brown University.
- Richard C. Overbaugh** (2010; 1993). Professor of Teaching and Learning. B.M., M.A., Ed.D., West Virginia University.
- Douglas T. Owens** (2012; 2012). Associate Professor of Music and F. Ludwig Diehn Endowed Chair. B.M.E., M.M., University of Colorado - Boulder; D.A., University of Northern Colorado.
- William A. Owings** (2005; 2002). Professor of Educational Foundations and Leadership. B.A., Towson State University; M.S., Johns Hopkins University; Ed.D., Virginia Polytechnic Institute and State University.
- Jose Javier Padilla** (2011; 2011). Research Assistant Professor, Virginia Modeling, Analysis and Simulation Center. B.S., Universidad Nacional de Colombia; M.B.A., Lynn University; Ph.D., Old Dominion University.
- Miguel A. Padilla** (2014; 2008). Associate Professor of Psychology. B.A., California State University – Dominguez Hills; M.A., Ph.D., University of Florida. Joint appointment with the Department of Mathematics and Statistics.
- Maria Padilla-Telep** (2013; 2013). Lecturer of Foreign Languages and Literatures. B.A., University of Puerto Rico - Mayaguez; M.A., University of Puerto Rico - Rio Piedras.
- Vivian J. Paige** (2011; 2011). Instructor of Accounting. B.S.B.A., M.B.A., Old Dominion University; CPA.
- Andrei Pakhomov** (2011; 2005; 2007). Research Professor, Frank Reidy Research Center for Bioelectrics. B.S., M.S., Moscow State University (Russia); Ph.D., Medical Radiology Research Institute, Russian Academy of Medical Sciences.
- Olga Pakhomova** (2009; 2009). Research Associate Professor, Frank Reidy Research Center for Bioelectrics. B.S., M.S., Moscow State University (Russia); Ph.D., Medical Radiology Research Institute, Russian Academy of Medical Sciences.
- Kay L. Palmer** (1983; 1979). Associate Professor of Nursing. B.S.N., DePaul University; M.S.N., Loyola University.
- Yiannis E. Papelis** (2007; 2007). Research Professor, Virginia Modeling, Analysis and Simulation Center. B.S., Southern Illinois University; M.S., Purdue University; Ph.D., University of Iowa.
- Jong Chool Park** (2010; 2010). Assistant Professor of Accounting. B.A., Seoul National University (South Korea); M.A., State University of New York at Buffalo; M.S., University of Chicago; Ph.D., Carnegie Mellon University.
- Jason L. Parker** (2012; 2005). Senior Lecturer of Psychology. B.S., M.S., Old Dominion University; Ph.D., Virginia Polytechnic Institute and State University.
- Radha J. Parker** (1998; 1992). Associate Professor of Counseling and Human Services. B.A., Christopher Newport College; M.A., M.Ed., M.Ed., Ed.S., Ph.D., University of Virginia.
- V. Andrea Parodi** (2011; 2011). Research Associate Professor, Virginia Modeling, Analysis and Simulation Center. B.A., College of Mount Saint Vincent; M.S.N., Vanderbilt University; D.S.N., University of Alabama – Birmingham.
- Steven M. Pascal** (2012; 2012). Professor of Chemistry and Biochemistry. B.S., Nebraska Wesleyan University; M.A., Kent State University; Ph.D., Florida State University.
- James F. Paulson** (2011; 2011). Associate Professor of Psychology. B.S., Appalachian State University; M.S., Ph.D., University of North Carolina at Greensboro.
- Brian K. Payne** (2013; 1996; 2013). Vice Provost for Graduate and Undergraduate Academic Programs and Professor of Sociology and Criminal Justice. B.A., M.A., Ph.D., Indiana University of Pennsylvania.
- Pilar Pazos-Lagos** (2014; 2008). Associate Professor of Engineering Management and Systems Engineering. B.S., M.S., University of Vigo (Spain); M.S., Ph.D., Texas Tech University.
- Michael P. Pearson** (2000; 1988). Professor of English. B.A., Fordham University; M.A., University of San Francisco; Ph.D., Pennsylvania State University. Designated as a University Professor.



- Yvette E. Pearson** (2010; 2002). Associate Professor of Philosophy and Religious Studies. B.A., University of San Diego; M.A., Ph.D., University of Miami. Designated as a University Professor.
- Janet Peery** (2008; 1993). Professor of English. B.A., M.F.A., Wichita State University. Designated as a University Professor.
- Yan Peng** (2014; 2008). Associate Professor of Mathematics and Statistics. B.Eng., M.Sc., Nanjing University of Aeronautics and Astronautics (China); Ph.D., National University of Singapore.
- Mary Beth Pennington** (2013; 2013). Lecturer of English. B.A., M.A., Virginia Polytechnic Institute and State University; Ph.D., University of North Carolina at Greensboro.
- Anthony C. Perez** (2013; 2013). Assistant Professor of Educational Foundations and Leadership. B.A., Rutgers University; M.A., LaSalle University; Ph.D., Temple University.
- Princess Joy L. Perry** (2013; 2004). Senior Lecturer of English. B.S., M.F.A., Old Dominion University.
- Ann H. Pettingill** (1994; 1990). Associate University Librarian and Librarian III. B.A., Vassar College; M.S.L.S., University of North Carolina at Chapel Hill; M.A., California State University at Los Angeles.
- Delores Phillips** (2009; 2009). Assistant Professor of English. B.A., Gettysburg College; M.A., Ph.D., University of Maryland – College Park.
- C. Ariel Pinto** (2010; 2004). Associate Professor of Engineering Management and Systems Engineering. B.S., M.S., University of the Philippines; Ph.D., University of Virginia.
- Hans-Peter Plag** (2013; 2013). Professor of Ocean, Earth, and Atmospheric Sciences. Ph.D., Free University of Berlin (Germany).
- Chris D. Platsoucas** (2007; 2007). Dean of the College of Sciences and Professor of Biological Sciences. B.S., University of Patras (Greece); Ph.D., Massachusetts Institute of Technology.
- Patricia A. Pleban** (1985; 1979). Associate Professor of Chemistry and Biochemistry. B.S., Kent State University; M.S., Ph.D., Cleveland State University.
- Karen A. Polonko** (1991; 1983). Professor of Sociology and Criminal Justice. B.A., Manhattanville College; A.M., Ph.D., Indiana University. Designated as a University Professor.
- Linda L. Pond** (2011; 2006). Senior Lecturer of STEM Education and Professional Studies. B.S., The College of William and Mary; M.Ed., University of Virginia.
- Dimitrie C. Popescu** (2012; 2006). Associate Professor of Electrical and Computer Engineering. Diploma, M.S., Polytechnic Institute of Bucharest (Romania); Ph.D., Rutgers University.
- Otilia Popescu** (2013; 2013). Assistant Professor of Engineering Technology. Diploma, M.S., Polytechnic Institute of Bucharest (Romania); Ph.D., Rutgers University.
- Bryan E. Porter** (2013; 1996). Professor of Psychology. B.S., Virginia Polytechnic Institute and State University; M.S., Memphis State University; Ph.D., University of Memphis. Designated as a University Professor.
- Mary B. Porter-Troupe** (2012; 2003; 2012). Lecturer of English. B. A., University of North Carolina- Chapel Hill; M.A., Old Dominion University.
- Rebecca Deal Poston** (2010; 2008; 2010). Lecturer of Nursing. B.A., B.S.N., University of Virginia; M.S.N., Old Dominion University.
- Jennifer L. Poutsma** (2006; 2000). Associate Professor of Chemistry and Biochemistry. B.S., University of Chicago; Ph.D., University of California at Los Angeles.
- Ramamurthy Prabhakaran** (1985; 1979). Professor of Mechanical and Aerospace Engineering. B.S., M.S., Indian Institute of Science; Ph.D., Illinois Institute of Technology. Designated as an Eminent Professor.
- Greta Pratt** (2013; 2007). Associate Professor of Art. B.F.A., University of Minnesota; M.F.A., State University of New York at New Paltz.
- Joshua Pretlow, III** (2013; 2013). Assistant Professor of Educational Foundations and Leadership. B.A., University of Virginia; M.T., Virginia Commonwealth University; Ph.D., University of Virginia.
- Shana Lee Pribesh** (2011; 2004). Associate Professor of Educational Foundations and Leadership. B.S., University of Virginia; M.A., Ph.D., The Ohio State University.
- Gene Hill Price** (2004; 1983). Senior Lecturer of Computer Science. B.S., United States Naval Academy; M.S., Old Dominion University.
- Yelena A. Prok** (2012; 2012). Visiting Assistant Professor of Physics. B.A., Ph.D., University of Virginia.
- Stephen M. Pullen** (2010; 2004). Associate Professor of Communication and Theatre Arts. B.A., Brigham Young University; Diploma, Drama Studies and Classical Acting, London Academy of Music and Dramatic Arts; M.F.A., University of Southern California.
- Kathleen Forst Putnam** (2010; 2009). Assistant Professor of Nursing. B.S.N., Old Dominion University; M.S.N., Ph.D., Virginia Commonwealth University/Medical College of Virginia.
- Shizhi Qian** (2011; 2008). Associate Professor of Mechanical and Aerospace Engineering. Ph.D., Huazhong University (China); Ph.D., University of Pennsylvania.
- Ghaith Rabadi** (2008; 2002). Associate Professor of Engineering Management and Systems Engineering. B.Sc., University of Jordan; M.S., Ph.D., University of Central Florida.
- Anatoly Radyushkin** (1991; 1991). Professor of Physics. M.S., Ph.D., Moscow State University (Russia). Designated as an Eminent Scholar.
- Belinda R. Rafferty** (2012; 2012). Instructor of English. A.A., Tidewater Community College; B.A., M.A., Old Dominion University.
- Balasubramanian Ramjee** (2013; 2007). Associate Professor of Chemistry and Biochemistry. B.Sc., Loyola College, University of Madras (India); M.S., Ph.D., Indian Institute of Science.
- Desh Ranjan** (2009; 2009). Professor of Computer Science. B.T., Indian Institute of Technology; M.S., Ph.D., Cornell University.
- Robert E. Ratzlaff** (1993; 1986). Associate Professor of Biological Sciences. B.S., Ph.D., University of South Dakota.
- Gregory Raver-Lampman** (2013; 2013). Lecturer, English Language Center. B.A., University of California - Berkeley; M.A., Old Dominion University.
- Sharon A. Raver-Lampman** (1997; 1985). Professor of Communication Disorders and Special Education. B.A., University of South Florida; M.A., Ed.S., George Peabody College; Ph.D., University of South Florida. Designated as a University Professor.
- Laura E. Ray** (2010; 2010). Lecturer, English Language Center. B.S., State University of New York College of Environmental Science and Forestry; M.A., Old Dominion University.
- Anastasia M. Raymer** (2006; 1996). Professor of Communication Disorders and Special Education. B.S., University of Wisconsin-Madison; M.A., Ph.D., University of Florida.
- Zia Razaq** (1988; 1982). Professor of Civil and Environmental Engineering. B.E., University of Peshawar (Pakistan); M.A.Sc., University of Windsor (Canada); D.Sc., Washington University; P.E. Designated as a University Professor.
- Lamar Reams** (2012; 2012). Assistant Professor of Human Movement Sciences. B.A., University of Tennessee - Knoxville; M.S., Northern Illinois University; Ph.D., University of Northern Colorado.

- Philip A. Reed** (2006; 2002). Associate Professor of STEM Education and Professional Studies. B.S., Old Dominion University; M.A., University of South Florida; Ph.D., Virginia Polytechnic Institute and State University.
- Mark C. Rehfuss** (2013; 2011). Associate Professor of Counseling and Human Services. B.A., Miami University (Ohio); M.A., M.Div., Ashland Theological Seminary; Ph.D., Kent State University.
- Zhongtang Ren** (2010; 2010). Lecturer of Foreign Languages and Literatures. B.A., Henan Normal University (China); M.S.Ed., Ph.D., Old Dominion University.
- Sheri Reynolds** (2008; 1997). Professor of English and the Perry Morgan Chair in Southern Literature. B.A., Davidson College; M.F.A., Virginia Commonwealth University. Designated as a University Professor.
- G. Steven Rhiel** (1983; 1977). Associate Professor of Information Technology/Decision Sciences. B.S., University of Wisconsin; M.S., Winona State University; Ph.D., University of Northern Colorado. Designated as a University Professor.
- James G. Rhoades, Jr.** (2013; 2013). Social Sciences Reference Services Librarian and Librarian II. B.A., University of Delaware; M.L.I.S., Florida State University.
- Cathleen Rhodes** (2013; 2013). Lecturer of English. B.S., Radford University; M.A., Old Dominion University.
- Daniel P. Richards** (2013; 2013). Assistant Professor of English. B.A., M.A., University of Windsor (Canada); Ph.D., University of South Florida.
- Corrin G. Richels** (2010; 2010). Assistant Professor of Communication Disorders and Special Education. B.S., M.S., James Madison University; Ph.D., Vanderbilt University.
- Jesse T. Richman** (2012; 2006). Associate Professor of Political Science and Geography. B.Phil., University of Pittsburgh; M.A., Ph.D., Carnegie Mellon University.
- Lynn L. Ridinger** (2006; 2000). Associate Professor of Human Movement Sciences. B.S., Central Michigan University; M.A., Kent State University; Ph.D., The Ohio State University.
- Janet E. Rinehart-Kim** (2013; 2013). Lecturer of Biological Sciences. B.S., Ph.D., Ohio State University.
- Stacie I. Ringleb** (2013; 2007). Associate Professor of Mechanical and Aerospace Engineering. B.S., Case Western Reserve University; M.S.E., Temple University; Ph.D., Drexel University.
- John M. Ritz** (1987; 1977). Professor of STEM Education and Professional Studies. B.S., Purdue University; M.S., University of Wisconsin-Stout; Ed.D., West Virginia University.
- Jack E. Robinson** (1982; 1974). Associate Professor of Educational Foundations and Leadership. A.B., Drake University; A.M., Ph.D., University of Iowa.
- Timothy M. Robinson** (2010; 2010). Assistant Professor of English. B.S., State University of New York College at Brockport; M.A., Ph.D., The Pennsylvania State University.
- Rochelle Rodrigo** (2012; 2011). Assistant Professor of English. B.A., University of California - Riverside; M.A., M.A., Ph.D., Arizona State University.
- David Seyun Roh** (2009; 2009). Assistant Professor of English. B.A., University of California - Los Angeles; Ed.M., Harvard Graduate School of Education; M.A., Ph.D., University of California - Santa Barbara.
- Julia E. Romberger-Depew** (2012; 2005). Associate Professor of English. B.A., Pennsylvania State University; M.A., Kutztown University; Ph.D., Purdue University.
- Kevin E. Romberger-Depew** (2010; 2004). Associate Professor of English. B.A., M.A., California State University at Chico; Ph.D., Purdue University.
- Donna L. Rose** (2010; 2005). Senior Lecturer of Nursing. A.A.S., Tidewater Community College; B.S.N., M.S.N., Old Dominion University.
- Lesley A. Rosenberg** (2013; 2013). Lecturer, English Language Center. B.S., James Madison University; M.A., Old Dominion University.
- John R. G. Roth** (2011; 2005). Associate Professor of Art. B.S., Northern Michigan University; M.F.A., University of Wisconsin - Madison.
- Dawn L. Rothe** (2011; 2008). Associate Professor of Sociology and Criminal Justice. B.A., Southern Michigan University; M.A., Ph.D., Western Michigan University.
- Bruce L. Rubin** (1987; 1981). Associate Professor of Finance. B.S., New York University; M.A., Ph.D., Case Western Reserve University.
- Lucinda Rush** (2012; 2012). Education Reference Services Librarian and Librarian I. B.M., Longwood University; M.M.E., Shenandoah University; M.L.I.S., University of South Carolina.
- Daniel M. Russell** (2010; 2010). Assistant Professor of Physical Therapy and Athletic Training. B.Sc., Manchester Metropolitan University (United Kingdom); M.S., Louisiana State University; Ph.D., The Pennsylvania State University.
- Sara E. Russell** (2006; 2006) Instructor of Information Technology/ Decision Sciences. B.S., University of Delaware; M.B.A., Old Dominion University.
- Carolyn M. Rutledge** (2014; 2002). Professor of Nursing. B.S.N., Medical College of Virginia; M.S.N., Ph.D., Old Dominion University.
- Corey A. Rynders** (2012; 2012). Assistant Professor of Human Movement Sciences. B.A., State University of New York at Buffalo; M.Ed., Ph.D., University of Virginia.
- Patrick C. Sachs** (2013; 2013). Assistant Professor of Medical Diagnostic and Translational Sciences. B.S., Virginia Commonwealth University; Ph.D., Medical College of Virginia.
- Burton Saint John, III** (2011; 2005). Associate Professor of Communication and Theatre Arts. B.A., M.A., Wichita State University; Ph.D., St. Louis University.
- Kelly Samarzea** (2009; 2009). Lecturer of Music. B.M., University of Arkansas; M.M., Indiana University.
- Avi Santo** (2013; 2006). Associate Professor of Communication and Theatre Arts. B.F.A., Concordia University (Canada); M.A., Ph.D., University of Texas at Austin.
- Karen Sanzo** (2011; 2006). Associate Professor of Educational Foundations and Leadership. B.A., The College of William and Mary; M.A., Ed.D., The George Washington University.
- Mark W. Scerbo** (2004; 1990). Professor of Psychology. B.A., Rutgers University; M.A., Ph.D., University of Cincinnati.
- Nancy Schafer** (1998; 1988). Head, Reference and Research Services and Librarian III. B.A., B.A.L.S., College of St. Catherine; A.M.L.S., University of Michigan; M.S.Ed., Old Dominion University.
- Gary C. Schafran** (2002; 1987). Professor of Civil and Environmental Engineering. B.S., M.S., Ph.D., Syracuse University.
- Joanne Scheibman** (2006; 2000). Associate Professor of English. B.A., M.A., Ph.D., University of New Mexico. Designated as a University Professor.
- Rocco Schiavilla** (2002; 1993). Professor of Physics. Laurea, University of Pisa (Italy); M.S., Ph.D., University of Illinois. Designated as an Eminent Scholar.
- Peter Schulman** (2010; 1996). Professor of Foreign Languages and Literatures. B.A., M.A., M.Phil., Ph.D., Columbia University.

- Rachel E. Schroeder** (2013; 2013). Lecturer of Biological Sciences. B.S., Texas A & M University - Corpus Christi; M.S., Christopher Newport University; Ph.D., Old Dominion University.
- Kathryn S. Schwartz** (2011; 2011). Assistant Professor of Communication Disorders and Special Education. B.S., Miami University (Ohio); Doctor of Audiology, University of Louisville School of Medicine; Ph.D., University of Memphis.
- Alan Schwitzer** (2009; 1995). Professor of Counseling and Human Services. B.S., Virginia Polytechnic Institute and State University; M.S., Ph.D., Virginia Commonwealth University.
- Micah Scott** (2011; 1998). Assistant Professor of Nursing. B.S.N., Old Dominion University; M.S., Medical College of Virginia; Ph.D., Hampton University.
- Jay P. Scribner** (2011; 2011). Professor of Educational Foundations and Leadership. B.A., Wake Forest University; M.P.I.A., University of Pittsburgh; Ph.D., University of Wisconsin - Madison.
- Maurice Seaton** (2006; 1994; 2006). Instructor of Economics. B.S., North Dakota State University; M.S., M.S., Virginia Polytechnic Institute and State University.
- Scott R. Sechrist** (1993; 1987). Associate Professor of Medical Diagnostic and Translational Sciences. B.S., M.S., Old Dominion University; Ed.D., The College of William and Mary. Designated as a University Professor.
- Mamadou Diouf Seck** (2013; 2013). Assistant Professor of Engineering Management and Systems Engineering. DUT, Université d'Orléans (France); M.Eng., Ecole Polytechnique Universitaire de Marseille (France); M.S., Université de Provence (France); Ph.D., Université de Paul Cézanne (France).
- Peter N. Sedwick** (2008; 2008). Associate Professor of Ocean, Earth, and Atmospheric Sciences. B.S., Ph.D., University of Hawaii at Manoa.
- Michael W. Seek** (2012; 2012). Assistant Professor of Civil and Environmental Engineering. B.S., M.S., Ph.D., Virginia Polytechnic Institute and State University; P.E.
- Timothy Seibles** (2001; 1995). Associate Professor of English. B.A., Southern Methodist University; M.F.A., Vermont College of Norwich University.
- Bruce M. Seifert** (1998; 1984). Professor of Finance. B.A., Carleton College; M.B.A., Ph.D., University of Michigan.
- Gregory V. Selby** (1999; 1983). Professor of Mechanical and Aerospace Engineering. B.S., University of Virginia; M.S., Ph.D., University of Delaware.
- David D. Selover** (2004; 1998). Associate Professor of Economics. B.A., M.A., San Diego State University; M.A., Ph.D., University of California-San Diego.
- Iurii Semenov** (2013; 2013). Research Assistant Professor, Frank Reidy Research Center for Bioelectrics. M.Sc., Taras Shevchenko Kyiv National University (Ukraine); Ph.D., Kyiv National University (Ukraine).
- Simon H. Serfaty** (1993; 1993). Professor of International Studies. B.A., Hunter College; M.A., School of Advanced International Studies; Ph.D., Johns Hopkins University. Designated as an Eminent Scholar.
- Andrew R. Sewick** (2013; 2013). Lecturer of Foreign Languages and Literatures. B.A., Michigan State University; M.A., New York University.
- Stephen L. Shapiro** (2014; 2008). Associate Professor of Human Movement Sciences. B.S., M.S., University of Central Florida; Ph.D., University of Northern Colorado.
- Jacqueline E. Sharpe** (2008; 2006). Senior Lecturer of Community and Environmental Health. B.S.N., Winston-Salem State University; M.S.N., University of Maryland; Ph.D., Old Dominion University.
- Yuzhong Shen** (2012; 2006). Associate Professor of Modeling, Simulation and Visualization Engineering. B.S., Fudan University (China); M.S., Mississippi State University; Ph.D., University of Delaware.
- Jewel Goodman Shepherd** (2013; 2013). Visiting Assistant Professor of Community and Environmental Health. B.A., George Washington University; M.P.A., Troy University; Ph.D., Old Dominion University.
- David Shields** (2013; 2013). Assistant Professor of Art. B.F.A., Louisiana Tech University; M.F.A., Savannah College of Art and Design.
- Deanne Shuman** (1989; 1976). Professor of Dental Hygiene. B.S., M.S., Ph.D., Old Dominion University.
- Carol Simpson** (2008; 2008). Provost and Vice President for Academic Affairs and Professor of Ocean, Earth, and Atmospheric Sciences. H.N.C., Swansea College of Technology (United Kingdom); B.Sc., University of Wales (United Kingdom); M.Sc., University of Witwatersrand (South Africa); Ph.D., Eidgenössische Technische Hochschule Zürich (Switzerland).
- Anusorn Singhapakdi** (2002; 1989). Professor of Marketing. B.S.C.E. and B.S., University of Wisconsin-Madison; M.B.A., University of Wisconsin-Whitewater; Ph.D., University of Mississippi.
- Lee Slater** (2012; 2010). Lecturer of Foreign Languages and Literatures. B.A., Dickinson College; M.A., New York University; Ph.D., Brown University.
- Kathleen S. Slauson-Bevins** (2012; 2012). Assistant Professor of Sociology and Criminal Justice. A.A., Ellsworth Community College; B.S., M.S., Iowa State University; Ph.D., University of Nebraska - Lincoln.
- Jennifer S. Sloggie - Pierce** (2012; 2002; 2005). Lecturer of English. B.A., University of Virginia; M.A., Old Dominion University.
- Donald Hugh Smith** (1979; 1974). Associate Professor of Sociology and Criminal Justice. A.B., A.M., California State University at Long Beach; Ph.D., Emory University.
- Ennice D. Smith** (2011; 2011). Lecturer of Mathematics and Statistics. B.S., M.S., Elizabeth City State University.
- Janis Krebs Smith** (2010; 1986). Lecturer of English. B.A., Mary Baldwin College; M.A., Wake Forest University.
- Katherine L. Smith** (2011; 2011). Lecturer of Mathematics and Statistics. B.S., M.S., Old Dominion University.
- Thomas J. Socha** (2011; 1989). Professor of Communication and Theatre Arts. B.A., Loyola University; M.A., University of Illinois-Chicago; Ph.D., University of Iowa. Designated as a University Professor.
- John A. Sokolowski** (2006; 2006). Associate Professor of Modeling, Simulation and Visualization Engineering and Executive Director of Virginia Modeling, Analysis and Simulation Center. B.S., Purdue University; M.E.M., Ph.D., Old Dominion University.
- C. Thomas Somma** (1984; 1978). Associate Professor of Medical Diagnostic and Translational Sciences. B.S.M.T., Baptist Medical Center, Jacksonville; M.S., Virginia Polytechnic Institute and State University; Ed.D., The College of William and Mary.
- Jody C. Sommerfeldt** (2013; 2008). Senior Lecturer of Teaching and Learning. B.S., The College of William and Mary; M.S.Ed., Old Dominion University.
- Masha Sosonkina** (2012; 2012). Professor of Modeling, Simulation and Visualization Engineering. B.S., M.S., Kiev National University (Ukraine); Ph.D., Virginia Polytechnic Institute and State University.
- Andres Sousa-Poza** (2006; 2000). Associate Professor of Engineering Management and Systems Engineering. B.Sc., University of Cape Town (South Africa); M.S., Ph.D., University of Missouri - Rolla.

**Narketta M. Sparkman** (2012; 2012). Assistant Professor of Counseling and Human Services. B.A., Madonna University; M.A., University of Michigan - Dearborn; Ed.D., Capella University.

**Jennifer Spiegel** (2012; 2012). Lecturer, English Language Center. B.A., M.A., Old Dominion University.

**Robert J. Spina** (2006; 2006). Associate Dean, Darden College of Education, and Professor of Human Movement Sciences. B.S., C.W. Post College of Long Island University; M.S., Queens College; Ph.D., University of Pittsburgh.

**Randall R. Spurrier** (2009; 1999). Senior Lecturer of Accounting. B.B.A., M.B.A., University of Hawaii; C.P.A.

**Michael W. Stacey** (2007; 2007). Research Associate Professor, Frank Reidy Research Center for Bioelectrics. B.Sc., University of Hull (United Kingdom); Ph.D., University of Birmingham (United Kingdom).

**Charles D. Stanton** (2007; 2007). Lecturer of Music. B.A., Wingate University; M.M., University of North Carolina at Greensboro.

**Christina D. Steel** (2013; 2013). Lecturer of Biological Sciences. B.A., B.S., Radford University; Ph.D., Old Dominion University and Eastern Virginia Medical School.

**Jill E. Stefaniak** (2013; 2013). Assistant Professor of STEM Education and Professional Studies. B.Comm., Windsor University (Canada); M.T.D., Oakland University; Ph.D., Wayne State University.

**Michael Stein** (2010; 2006). Professor of Accounting. B.A., Rutgers University; B.B.A., M.A., University of Pennsylvania; Ph.D., University of British Columbia.

**Ralph W. Stevens** (1992; 1986). Associate Professor of Biological Sciences. B.S., Michigan State University; M.S., Wayne State University; Ph.D., University of Texas Medical School at Houston. Designated as a University Professor.

**Kim C. Stewart** (2011; 2011). Assistant Professor of Human Movement Sciences. B.A., Mercer University; M.S., Virginia Polytechnic Institute and State University; Ph.D., University of Florida.

**Maureen D. Stiner** (2000; 1988; 2000). Instructor of Finance. B.A., Miami University of Ohio; M.B.A., University of Pittsburgh.

**Sharon C. Stull** (2011; 2006; 2009). Lecturer of Dental Hygiene. A.A.S., Coastal Carolina Community College; B.S.D.H., M.S.D.H., Old Dominion University.

**Robert J. Strozak** (2013; 2007). Senior Lecturer of Mathematics and Statistics. B.A., Dowling College; M.S., Old Dominion University.

**Paloma Ibáñez Sugg** (2013; 2013). Lecturer of Foreign Languages and Literatures. A.S., Santa Fe Community College; B.A., M.A., University of Florida.

**Stephanie K. Sugioka** (2010; 2010). Lecturer of English. B.A., Goucher College; M.A., Johns Hopkins University; M.A., University of Wisconsin at Madison; Ph.D., Old Dominion University.

**Yonghee Suh** (2009; 2009). Assistant Professor of Teaching and Learning. B.S., M.S., Seoul National University (Korea); Ph.D., Michigan State University.

**Charles I. Sukenik** (2011; 1997). Professor of Physics. B.A., Cornell University; Ph.D., Yale University. Designated as a University Professor.

**Hamedta Sultana** (2012; 2012). Assistant Professor of Biological Sciences. B.Sc., M.Sc., Bangalore University (India); Ph.D., University of Cologne (Germany).

**Christine Ann Sump** (2010; 2010). Lecturer of Nursing. B.S.N., St. Joseph College; M.S.N., Old Dominion University.

**Melvina T. Sumter** (2006; 2000). Associate Professor of Sociology and Criminal Justice. B.A., M.C.J., University of South Carolina – Columbia; Ph.D., Florida State University.

**Licheng Sun** (2011; 2005). Associate Professor of Finance. B.A., Shanghai Teachers University (China); M.Econ., Shanghai University of Finance and Economics (China); Ph.D., University of Georgia.

**Eunyoung (Christine) Sung** (2013; 2013). Assistant Professor of STEM Education and Professional Studies. B.S., Catholic University of Daegu (Korea); M.A., Indiana University; Ph.D., Michigan State University.

**Glen Sussman** (2003; 1992). Professor of Political Science and Geography. B.A., University of California-Los Angeles; M.A., San Francisco State University; Ph.D., Washington State University. Designated as a University Professor.

**Ian E. Sutherland** (2013; 2013). Assistant Professor of Educational Foundations and Leadership. B.A., Pennsylvania State University; M.Ed., George Mason University; Ph.D., Lehigh University.

**Araceli Suzara** (2001; 1999). Director of the Filipino American Student Cultural Center and Assistant Professor of Sociology and Criminal Justice. B.S., A.B., Assumption College (Philippines); M.A., Ph.D., Loyola University of Chicago.

**David P. Swain** (2001; 1993). Professor of Human Movement Sciences and Director, Wellness Institute and Research Center. B.A., University of South Florida; Ph.D., University of North Carolina Medical School-Chapel Hill. Designated as a University Professor.

**Mariana Szklo-Coxe** (2014; 2008). Associate Professor of Community and Environmental Health. B.A., Brown University; M.H.S., Ph.D., Johns Hopkins University.

**Wayne Kenneth Talley** (1983; 1972). Professor of Economics and Frederick Wharton Beazley Endowed Professor. A.B., University of Richmond; M.S., Virginia Commonwealth University; A.M., Ph.D., University of Kentucky. Designated as an Eminent Scholar.

**Michael T. Tamburello** (2004; 1998). Associate Professor of Physical Therapy and Athletic Training. B.S., University of Florida; M.S., Medical College of Virginia; Ph.D., University of Virginia.

**Chuanyi Tang** (2013; 2013). Assistant Professor of Marketing. B.E., Donghua University (China); M.M., Renmin University (China); Ph.D., University of Arizona.

**Arthur C. Taylor III** (2002; 1989). Professor of Mechanical and Aerospace Engineering. B.S., Washington and Lee University; B.S., Old Dominion University; M.S., Ph.D., Virginia Polytechnic Institute and State University.

**Frederick R. Tench** (2007; 2007). Acquisitions and Preservation Services Librarian and Librarian II. B.A., Christopher Newport University; M.L.S., The Catholic University of America.

**Lee J. Tepley** (2013; 1986; 2013). Lecturer of Music. B.M., Oberlin College Conservatory; M.M., D.M.A., Eastman School of Music.

**Megan M. Thompson** (2013; 2009). Assistant Professor of Communication and Theatre Arts. B.A., University of Wisconsin – Madison; M.F.A., University of Maryland – College Park.

**Sophie K. Thompson** (2004; 1998). Associate Professor of Medical Diagnostic and Translational Sciences. B.S., M.H.S., Medical University of South Carolina.

**William H. Thompson** (2006; 2006). Lecturer, English Language Center. B.A., West Virginia University; M.I.M., American Graduate School of International Management; M.A., M.T., University of Virginia.

**Victoria M. Time** (2014; 1997). Professor of Sociology and Criminal Justice. LL.B., LL.M., University of Yaounde (Cameroon); M.C.L., George Washington University; M.S., The American University; Ph.D., Indiana University of Pennsylvania. Designated as a University Professor.

**Susan Lynn Tolle** (1996; 1983). Professor of Dental Hygiene. B.H.S., M.S.Ed., University of Kentucky. Designated as a University Professor.

- Cynthia L. Tomovic** (2008; 2008). Professor of STEM Education and Professional Studies. B.A., M.Ed., University of Illinois at Chicago; M.A., Ph.D., University of Michigan.
- Mileta M. Tomovic** (2008; 2008). Professor of Engineering Technology. B.S., University of Belgrade (Yugoslavia); M.S., Massachusetts Institute of Technology; Ph.D., University of Michigan.
- Stephen W. Tonelson** (1995; 1981). Professor of Communication Disorders and Special Education. B.S., The College of William and Mary; M.S.Ed., Old Dominion University; Ed.D., University of Virginia.
- John F. Toomey** (2002; 1990). Professor of Music. B.S., Crane School of Music; M.M., Eastman School of Music. Designated as a University Professor.
- Jeffrey G. Toussaint** (2010; 2010). Lecturer of Sociology and Criminal Justice. B.S., M.A., Old Dominion University; Ph.D., Virginia Polytechnic Institute and State University.
- Cynthia Ann Trent** (2013; 2013). Lecturer of Nursing. B.S.N., George Mason University; M.S., Medical College of Virginia; D.N.P., Old Dominion University.
- Alexander Ray Treviño** (2011; 2007). Lecturer of Music. B.M., University of Texas at Austin; M.M., University of Tennessee – Knoxville; Ph.D., University of Washington.
- Ruth Ann Triplett** (2006; 1999). Professor of Sociology and Criminal Justice. B.S., Old Dominion University; M.A., Ph.D., University of Maryland – College Park. Designated as a University Professor.
- Virginia M. Tucker** (2012; 2004; 2006). Lecturer of English. B.A., Christopher Newport University; M.A., Old Dominion University.
- Kimberly Adams Tufts** (2004; 2004). Associate Professor of Nursing. B.S.N., Ohio State University; M.S.N., D.N., Case Western Reserve University.
- John Tweed** (1977; 1974). Professor of Mathematics and Statistics. A.R.C.S.T., Royal College of Science and Technology; M.Sc., University of Strathclyde (Scotland); Ph.D., University of Glasgow (Scotland). Designated as an Eminent Professor.
- Resit Unal** (1999; 1986). Professor of Engineering Management and Systems Engineering. B.S., Middle East Technical University (Turkey); M.S., Ph.D., University of Missouri-Rolla.
- Lindsay E. Usher** (2013; 2013). Assistant Professor of Human Movement Sciences. B.A., University of North Carolina - Chapel Hill; M.S., Ph.D., Pennsylvania State University.
- Linda L. Vahala** (1993; 1985; 1987). Associate Dean of the Batten College of Engineering and Technology and Associate Professor of Electrical and Computer Engineering. B.S., University of Illinois; M.S., University of Iowa; Ph.D., Old Dominion University.
- James R. Van Dore** (2013; 2011; 2013). Lecturer of Philosophy and Religious Studies. B.A., University of Michigan; M.T.S., Calvin Theological Seminary; Ph.D., Claremont Graduate University.
- Bonnie L. Van Lunen** (2014; 1999). Professor of Physical Therapy and Athletic Training. B.S., Castleton State College; M.S.Ed., Ph.D., University of Virginia.
- J. Wallace Van Orden** (1998; 1990). Professor of Physics. B.S., Utah State University; M.S., Ph.D., Stanford University.
- Suzanne W. Van Orden** (2010; 2005). Senior Lecturer of Nursing. B.A., Randolph Macon Women's College; B.S.N., M.S.Ed., M.S.N., Old Dominion University.
- Karen S. Vaughan** (2006; 1987). Digital Services Coordinator and Librarian III. A.A., Rio Hondo College; B.A., University of California-Los Angeles; M.A., San Diego State University; M.L.I.S., University of California-Berkeley.
- Elena V. Vera Guerrero** (2013; 2013). Lecturer of Foreign Languages and Literatures. B.E.S., Catholic University Santa Maria (Peru); B.S., San Martin de Porres University (Peru); M.A.L.P., Inca Garcilaso de la Vega University (Peru); M.A., Middlebury College.
- Alok K. Verma** (2005; 1981). Professor of Engineering Technology and Ray Ferrari Professor of Engineering Technology. B.T.A.E., Indian Institute of Technology (India); M.E., Ph.D.; Old Dominion University; PE.
- P. Thomas Vernier** (2013; 2013). Research Professor, Frank Reidy Research Center for Bioelectrics. B.S., Wheaton College; Ph.D., University of Southern California.
- Elizabeth J. Vincelette** (2010; 2010). Lecturer of English. B.A., University of Virginia; M.A., Ph.D., Old Dominion University.
- Jelmer Vos** (2009; 2009). Assistant Professor of History. M.A., M.Sc., University of Amsterdam (Netherlands); Ph.D., University of London (United Kingdom).
- Leposava Vuskovic** (2002; 1993). Professor of Physics. Diploma, M.S., Ph.D., University of Belgrade (Yugoslavia). Designated as an Eminent Scholar.
- Gary A. Wagner** (2011; 2011). Professor of Economics. B.A., Youngstown State University; M.A., Ph.D., West Virginia University.
- David L. Walker** (2008; 2008). Lecturer of Music. B.M., Wheaton Conservatory; M.M., The University of Michigan.
- Martha L. Walker** (1992; 1986). Associate Professor of Physical Therapy and Athletic Training. B.S., University of Oklahoma; M.S., Medical College of Virginia; Ph.D., Virginia Commonwealth University.
- Joshua A. Wallach** (2014; 2008). Senior Lecturer of Chemistry and Biochemistry. B.S., The College of William and Mary; Ph.D., University of Connecticut.
- Deborah Ann Waller** (1995; 1989). Associate Professor of Biological Sciences. B.A., George Washington University; Ph.D., University of Texas-Austin.
- Eric L. Walters** (2011; 2011). Assistant Professor of Biological Sciences. B.S., M.S., University of Victoria (Canada); Ph.D., Florida State University.
- Guijun Wang** (2014; 2012). Professor of Chemistry and Biochemistry. B.S., M.S., Tsinghua University (China); Ph.D., Michigan State University.
- Jin Wang** (2012; 2007). Associate Professor of Mathematics and Statistics. B.S., M.S., University of Science and Technology; Ph.D., The Ohio State University.
- XiXi Wang** (2011; 2011). Associate Professor of Civil and Environmental Engineering. B.S., M.S., Tsinghua University; Ph.D., Iowa State University; P.E.
- Ginger S. Watson** (2007; 2007). Associate Professor of STEM Education and Professional Studies. B.S., M.S., University of Southern Illinois; Ph.D., The University of Iowa.
- Silvana R. Watson** (2006; 2000). Associate Professor of Communication Disorders and Special Education. B.A., Universidade Catolica de Pernambuco (Brazil); M.A., Ph.D., University of New Mexico.
- Renee A. Weather** (2008; 1996). Senior Lecturer of Information Technology/Decision Sciences. B.A., Fordham University; M.S., Polytechnic University.
- John Weber** (2010; 2010). Assistant Professor of History. B.A., Vanderbilt University; M.A., Ph.D., The College of William and Mary.
- Michele Clark Weigle** (2012; 2006). Associate Professor of Computer Science. B.S., Northwest Louisiana University; Ph.D., University of North Carolina - Chapel Hill.
- Seth H. Weinberg** (2014; 2014). Research Assistant Professor, Virginia Modeling, Analysis and Simulation Center. B.S.E., Duke University; Ph.D., Johns Hopkins University.

**Joshua T. Weinhandl** (2011; 2011). Assistant Professor of Human Movement Sciences. B.S., Greenville College; M.S., Ball State University; Ph.D., University of Wisconsin - Milwaukee.

**Lawrence B. Weinstein** (2003; 1992). Professor of Physics. B.S., Yale University; Ph.D., Massachusetts Institute of Technology. Designated as a University Professor and an Eminent Scholar.

**Shannon L. Wells** (2011; 2011). Lecturer of Ocean, Earth, and Atmospheric Sciences. B.S., Christopher Newport University; M.S., Ph.D., Old Dominion University.

**Marek Wermus** (1987; 1982). Associate Professor of Information Technology/Decision Sciences. M.S., Ph.D., Technical University of Wroclaw (Poland).

**Agnieszka Whelan** (2004; 2004). Instructor of Art. M.A., Uniwersytet Adama Mickiewicza (Poland).

**Colm T. Whelan** (2001; 2001). Professor of Physics. B.Sc., M.Sc., National University of Ireland; Ph.D., University of Cambridge (United Kingdom). Designated as an Eminent Scholar.

**Ingrid P. Whitaker** (2002; 1996). Associate Professor of Sociology and Criminal Justice. B.A., University of Illinois-Chicago; M.S.W., M.A., Ph.D., University of Michigan.

**Garland Francis White, III** (1979; 1973). Associate Professor of Sociology and Criminal Justice. B.S., M.S., Oklahoma State University; Ph.D., University of Washington.

**George O. White, III** (2010; 2010). Assistant Professor of Management. B.A., University of Alabama; J.D., Thomas M. Cooley Law School; LL.M., Emory University; M.B.A., Ph.D., University of Texas – El Paso.

**G. William Whitehurst** (1987; 1950; 1987). George M. and Linda H. Kaufman University Lecturer in Public Affairs. B.A., Washington and Lee University; M.A., University of Virginia; Ph.D., West Virginia University.

**G. Richard Whittecar** (1985; 1979). Associate Professor of Ocean, Earth, and Atmospheric Sciences. B.S., University of North Carolina; M.S., Ph.D., University of Wisconsin. Designated as a University Professor.

**Kideste Wilder-Bonner** (2009; 2009). Lecturer of Sociology and Criminal Justice. B.S., M.A., Old Dominion University; M.A., Ph.D., City University of New York.

**Lynn L. Wiles** (2011; 1996). Assistant Professor of Nursing. B.S.N., Radford University; M.S.N., Marymount University (Virginia); Ph.D., Duquesne University.

**Charles Edgar Wilson, Jr.** (2004; 1991). Dean of the College of Arts and Letters and Professor of English. B.A., West Georgia College; M.A., North Carolina State University; Ph.D., University of Georgia. Designated as a University Professor.

**Corrine L. Wilson** (2011; 2011). Lecturer of Mathematics and Statistics. B.S., Concord University; M.S., Ph.D., Old Dominion University.

**Barbara A. Winstead** (1993; 1979). Professor of Psychology. A.B., Wellesley College; Ph.D., Harvard University.

**Konrad G. Winters** (1990; 1986). Associate Professor of Communication and Theatre Arts. B.S., Concordia Teachers College; M.S., M.F.A., Illinois State University.

**Dylan E. Wittkower** (2011; 2011). Assistant Professor of Philosophy and Religious Studies. B.A., University of the Redlands; M.A., Ph.D., Vanderbilt University.

**Robert Wojtowicz** (2006; 1990). Professor of Art and Associate Vice Provost for Graduate Studies. B.A., M.A., University of Pennsylvania; M.A., Columbia University; Ph.D., University of Pennsylvania.

**Chris Wood** (2011; 2011). Associate Professor of Counseling and Human Services. B.A., Gonzaga University; M.S., Eastern Washington University; Ph.D., Oregon State University.

**Sally Copeland Wright** (2013; 2013). Lecturer of Music. B.M., East Carolina University; M.M., Florida State University.

**Harris Wu** (2011; 2005). Associate Professor of Information Technology/Decision Sciences. B.S., Nankai University (China); M.S., Florida State University; Ph.D., University of Michigan - Ann Arbor.

**Shu Xiao** (2008; 2008). Assistant Professor of Electrical and Computer Engineering. B.S., Gannan Teacher College (China); M.S., University of Science and Technology (China); Ph.D., Old Dominion University.

**Chunseng Xin** (2013; 2013). Associate Professor of Electrical and Computer Engineering. B.S., Wuhan University (China); M.E., Chinese Academy of Sciences; Ph.D., State University of New York at Buffalo.

**Li D. Xu** (2003; 2001). Professor of Information Technology/Decision Sciences. B.S., M.S., University of Science and Technology of China; Ph.D., Portland State University. Designated as an Eminent Scholar.

**Xiaohong Nancy Xu** (2009; 1998). Professor of Chemistry and Biochemistry. B.S., M.S., Xiamen University (China); Ph.D., University of Mississippi.

**Yin Xu** (2007; 2001). Associate Professor of Accounting. B.S., University of Akron; M.Acc., Ph.D., University of South Carolina – Columbia; C.P.A.

**Takeshi Yagihashi** (2011; 2011). Assistant Professor of Economics. B.A., Keio University (Japan); Ph.D., University of California at Davis.

**Xiushi Yang** (2005; 1993). Professor of Sociology and Criminal Justice. B.S., Hangzhou University (China); M.A., Ph.D., Brown University.

**Cherng-Jyh Yen** (2014; 2008). Associate Professor of Educational Foundations and Leadership. B.S., Tung-Hai University (Taiwan); M.S., Indiana University; Ph.D., University of Virginia.

**Steven A. Yetiv** (2004; 1994). Professor of Political Science and Geography and Louis I. Jaffe Professor of Arts & Letters. B.A., M.A., University of Akron; Ph.D., Kent State University. Designated as a University Professor.

**Brandon K. Yoder** (2013; 2013). Assistant Professor of Political Science and Geography. B.S., Cornell University; M.A., Ph.D., University of Virginia.

**Jaewan Yoon** (2002; 1995). Associate Professor of Civil and Environmental Engineering. B.E., Dongguk University (South Korea); M.S., Ph.D., North Dakota State University. Designated as a University Professor.

**Junji Yoshida** (2012; 2012). Assistant Professor of Foreign Languages and Literatures. B.A., Kwasei Gakuin University (Japan); M.A., Kyushu University (Japan); Ph.D., University of Oregon.

**Charlotte Young** (2012; 2012). Lecturer, English Language Center. B.S., University of Surrey (United Kingdom); M.A., Old Dominion University.

**Jennifer M. Younkin** (2010; 2003). Senior Lecturer of Psychology. B.S., M.S., Old Dominion University.

**Kenneth K. Yung** (2001; 1989). Professor of Finance. B.Soc.Sci., University of Hong Kong (China); M.B.A., State University of New York at Buffalo; Ph.D., Georgia State University.

**Juita-Elena Yusuf** (2014; 2008). Associate Professor of Urban Studies and Public Administration. B.S., University of Notre Dame; M.B.A., Indiana University; Ph.D., University of Kentucky.

**Elizabeth A. Zanoni** (2011; 2011). Assistant Professor of History. B.A., University of Notre Dame; M.A., Western Michigan University; Ph.D., University of Minnesota - Minneapolis.

**Alla P. Zareva** (2013; 2009). Associate Professor of English. B.A., College of International Tourism (Bulgaria); M.A., Veliko Turnovo University (Bulgaria); Ph.D., University of Georgia.

**Noam Zeev** (2008; 2008). Assistant Professor of Mathematics and Statistics. B.S., Simon Bolivar University (Venezuela); Ph.D., University of Delaware.

**Donald Jay Zeigler** (1992; 1980). Professor of Political Science and Geography. B.S., Shippensburg State College; A.M., University of Rhode Island; Ph.D., Michigan State University.

**Steven J. Zeil** (1988; 1988). Associate Professor of Computer Science. B.A., Thomas More College; M.S., Ph.D., Ohio State University.

**Dennis J. Zeisler** (1999; 1979). Professor of Music. B.M., B.M.E., M.Mus., University of Michigan. Designated as a University Professor.

**Christian W. Zemlin** (2011; 2011). Assistant Professor of Electrical and Computer Engineering. B.Sc., M.Sc., Technical University of Berlin (Germany); Ph.D., Humboldt University (Germany).

**Jing Zhang** (2012; 2012). Assistant Professor of Management. B.A., M.A., Renmin University (China); Ph.D., National University of Singapore.

**Qi (Harry) Zhang** (2011; 2005). Associate Professor of Community and Environmental Health. B.A., Fudan University (China); M.A., Ph.D., The University of Alabama.

**Weiyong Zhang** (2012; 2012). Assistant Professor of Information Technology/Decision Sciences. B.S., M.S., Fudan University (China); Ph.D., University of Minnesota - Minneapolis.

**Xiaoyu Zhang** (2013; 2013). Assistant Professor of Mechanical and Aerospace Engineering. B.S., M.S., Nanjing University of Aeronautics and Astronautics (China); Ph.D., University of Connecticut.

**Haiwen Zhou** (2009; 2002; 2005). Associate Professor of Economics. B.A., Nankai University (China); M.A., Zhongshan University (China); Ph.D., University of Maryland - College Park.

**Ruhai Zhou** (2009; 2004). Associate Professor of Mathematics and Statistics. B.S., M.S., Nanjing University (China); Ph.D., University of New Mexico.

**Xihe Zhu** (2009; 2009). Assistant Professor of Human Movement Sciences. B.Ed., M.Ed., Shanghai Institute of Physical Education (China); Ph.D., University of Maryland – College Park.

**Douglas E. Ziegenfuss** (2001; 1988). Professor of Accounting. B.A., Mount Saint Mary's College; M.S., American University; Ph.D., Virginia Commonwealth University; C.P.A., C.M.A., C.I.A.

**Richard C. Zimmerman** (2003; 2003). Professor of Ocean, Earth, and Atmospheric Sciences. B.S., M.S., Ph.D., University of Southern California.

**Mohammad Zubair** (2002; 1987). Professor of Computer Science. B.S., Delhi University (India); Ph.D., Indian Institute of Technology (India).

**Michael T. Zugelder** (2011; 1995). Professor of Finance. B.A., M.B.A., Indiana University; J.D., University of Toledo. Designated as a University Professor.

\* The listing reflects the faculty as of June 1, 2014. The dates in parentheses indicate the following: the first date, the year in which the present rank was attained; the second date, the year when the individual was first appointed to the faculty; a third date, the year of reappointment.

# Faculty Emeriti

Abdel M. Agami, *Professor Emeritus of Accounting*

Ali Osman Akan, *Professor Emeritus of Civil and Environmental Engineering*

Robert Ake, *University Professor Emeritus and Associate Professor Emeritus of Chemistry and Biochemistry*

Dwight Allen, *Eminent Scholar Emeritus of Educational Reform and Professor Emeritus*

Betty Alexy, *Associate Professor Emerita of Nursing*

Claire J. Anderson, *Associate Professor Emerita of Management*

Michael C. Andrews, *Eminent Scholar Emeritus and Louis I. Jaffe Professor Emeritus of English*

Steven K. Atiyah, *Assistant Professor Emeritus of Mathematics and Statistics*

William Bartolotta, *Associate Professor Emeritus of Music*

David R. Basco, *Professor Emeritus of Civil and Environmental Engineering*

Nancy Topping Bazin, *Eminent Scholar Emerita and Professor Emerita of English*

Jacob Becher, *Associate Professor Emeritus of Physics*

Charles E. Bell, *Professor Emeritus of Chemistry and Biochemistry*

Maurice Berube, *Eminent Scholar Emeritus and Professor Emeritus of Educational Leadership*

Samuel Bieber, *Professor Emeritus of Biological Sciences*

Frank W. Billmyer, *Professor Emeritus of Chemical Sciences*

Janet M. Bing, *University Professor Emerita and Professor Emerita of English*

Nicholas Bountress, *Professor Emeritus of Communication Disorders and Special Education*

Carl Boyd, *Eminent Scholar Emeritus and Louis I. Jaffe Professor Emeritus of History*

Colin Box, *Professor Emeritus of Community and Environmental Health*

William Brown, *Professor Emeritus of Educational Curriculum and Instruction*

John P. Broderick, *University Professor Emeritus and Professor Emeritus of English*

Katherine T. Bucher, *Professor Emerita of Educational Curriculum and Instruction*

James L. Bugg, *President Emeritus and Eminent Professor Emeritus of History*

Charles O. Burgess, *Professor Emeritus of English*

Leslie G. Carr, *Associate Professor Emeritus of Sociology and Criminal Justice*

Marion Carroll, *Assistant Professor Emeritus of Exercise Science, Physical Education and Recreation*

Keith A. Carson, *Associate Professor Emeritus of Biological Sciences*

Thomas R. Cash, *Professor Emeritus of Psychology*

Wilkie Chaffin, *Professor Emeritus of Information Systems and Decision Sciences*

Robert Y. Cheng, *Professor Emeritus of Civil Engineering*

Kwang S. Choi, *Associate Professor Emeritus of Finance*

Kae H. Chung, *Professor Emeritus of Management*

Forrest P. Clay Jr., *Professor Emeritus of Physics*

Glynn Coates, *Professor Emeritus of Psychology*

Charlie H. Cooke, *Professor Emeritus of Mathematics and Statistics*

Gary E. Copeland, *Professor Emeritus of Physics*

James L. Cox, Jr., *Professor Emeritus of Physics*

Edward M. Cross, *Professor Emeritus of Information Systems/Decision Sciences*

Ernest J. Cross, Jr., *Professor Emeritus of Aerospace Engineering*

Gary R. Crossman, *Professor Emeritus of Engineering Technology*

William H. Crouch, *Associate Professor Emeritus of Information Technology and Decision Sciences*

Jon R. Crunkleton, *Associate Professor Emeritus of Finance*

Gabriel T. Csanady, *Professor Emeritus of Oceanography*

William G. Cunningham, *Eminent Scholar Emeritus and Professor Emeritus of Educational Leadership and Counseling*

Stephen G. Cupschalk, *Associate Professor Emeritus of Mechanical Engineering*

Ram C. Dahiya, *Eminent Scholar Emeritus and Professor Emeritus of Mathematics and Statistics*

Joseph C. Daniel, *Professor Emeritus of Biological Sciences and Dean Emeritus of the College of Sciences*

Dennis A. Darby, *Professor Emeritus of Ocean, Earth and Atmospheric Sciences*

Michele L. Darby, *Eminent Scholar Emerita, University Professor Emerita and Professor Emerita of Dental Hygiene*

Walter F. Deal, III, *Associate Professor Emeritus of Occupational and Technical Studies*

Elizabeth S. DeBedts, *Associate Professor Emerita of Library Science*

Amin N. Dharamsi, *Professor Emeritus of Electrical and Computer Engineering*

Terry L. Dickinson, *Professor Emeritus of Psychology*

Leonard E. Dobrin, *Associate Professor Emeritus of Sociology and Criminal Justice*

Carol A. Doll, *Professor Emerita of Teaching and Learning*

Lynn Doyle, *Associate Professor Emerita of Education Leadership*

Chris Drake, *Professor Emerita of Political Science and Geography*

William A. Drewry, *Professor Emeritus of Civil and Environmental Engineering*

Perry M. Duncan, *Associate Professor Emeritus of Psychology*

Thomas H. Dunham, *Associate Professor Emeritus of Ocean, Earth and Atmospheric Sciences*

William Dunstan, *Professor Emeritus of Ocean, Earth and Atmospheric Sciences*

Natalie W. Etheridge, *Associate Professor Emerita of Health, Physical Education and Recreation*

John A. Fahey, *Associate Professor Emeritus of Foreign Languages and Literatures*

Anita C. Fellman, *Professor Emerita of History*



Lewis S. Ford, *Louis I. Jaffe Professor Emeritus of Humanities and Professor Emeritus of Philosophy and Religious Studies*

Stephen Foster, *Professor Emeritus of Foreign Languages and Literatures*

Mark Fravel, *Professor Emeritus of Educational Curriculum and Instruction*

Frederick G. Freeman, *Professor Emeritus of Psychology*

Justin C. Friberg, *Professor Emeritus of Political Science and Geography*

Ann E. Gargett, *Professor Emerita of Ocean, Earth and Atmospheric Sciences*

Glenn A. Gerdin, *Associate Professor Emeritus of Electrical and Computer Engineering*

Philip S. Gillette, *Associate Professor Emeritus of Political Science and Geography*

Billy J. Gilpin, *Associate Professor Emeritus of Mathematics and Statistics*

Albert S. Glickman, *Eminent Professor Emeritus of Psychology*

Andrew S. Gordon, *Professor Emeritus of Biological Sciences*

Fred W. Granger, *Associate Professor Emeritus of Information Technology and Decision Sciences*

William H. Graves, *Professor Emeritus of Counseling and Human Services and Dean Emeritus of the Darden College of Education*

Douglas G. Greene, *Professor Emeritus of History*

David R. Hager, *Professor Emeritus of Political Science and Higher Education Administration*

Jane M. Hager, *Professor Emerita of Teaching and Learning*

Hiroyuki Hamada, *Associate Professor Emeritus of Exercise Science, Sport, Physical Education and Recreation*

William J. Hanna, *Professor Emeritus of Geophysical Sciences*

D. Alan Harris, *Associate Professor Emeritus of History*

Harold G. Hawn, *Professor Emeritus of Music*

Alex Hawryluk, *Professor Emeritus of Management*

John Heinbockel, *Professor Emeritus of Mathematics and Statistics*

Paul L. Heine, *Associate Professor Emeritus of Exercise Science, Sport, Physical Education and Recreation and Associate Dean Emeritus of the Darden College of Education*

Carl O. Helvie, *Professor Emeritus of Nursing*

Erlene Hendrix, *Associate Professor Emerita of Communication and Theatre Arts*

Elizabeth S. Henry, *Associate Professor Emerita of Psychology*

Louis H. Henry, *Professor Emeritus of Economics and Dean Emeritus of the Honors College*

Carol F. Hines, *Associate Professor Emerita of Art*

Carole P. Hines, *Associate Professor Emerita of English*

S. Philip Hines Jr., *Associate Professor Emeritus of English*

John F. Holley, *Associate Professor Emeritus of Foreign Languages and Literatures*

John Holsinger, *Eminent Scholar Emeritus and Professor Emeritus of Biological Sciences*

Clare Houseman, *Associate Professor Emerita of Nursing*

Ian D. Howard, *Professor Emeritus of Physics*

Gilbert R. Hoy, *Eminent Scholar Emeritus and Professor Emeritus of Physics*

Jesse W. Hughes, *Professor Emeritus of Accounting*

Samir Ibrahim, *Professor Emeritus of Mechanical and Aerospace Engineering*

James Jarrett, *Professor Emeritus of Human Movement Sciences*

Beverley B. Johnson, *Associate Professor Emerita of Health, Physical Education and Recreation*

David E. Johnson, *Associate Professor Emeritus of Art*

Roger A. Johnson, *Associate Professor Emeritus of Educational Curriculum and Instruction*

Ronald E. Johnson, *University Professor Emeritus and Associate Professor Emeritus of Ocean, Earth and Atmospheric Sciences*

William B. Jones, *Associate Professor Emeritus of Philosophy and Religious Studies*

Osama A. Kandil, *Eminent Scholar Emeritus and Professor Emeritus of Mechanical and Aerospace Engineering*

Allan H. Kaufman, *Associate Professor Emeritus of Occupational and Technical Studies*

Robert L. Kernell, *Professor Emeritus of Physics*

Govind S. Khandelwal, *Professor Emeritus of Physics*

Raymond H. Kirby, *Professor Emeritus of Psychology*

Karl F. Knight, *Professor Emeritus of English*

Carl F. Koch, *Professor Emeritus of Geological Sciences*

John W. Kuehl, *Associate Professor Emeritus of History*

Harry S. Kuper, *Associate Professor Emeritus of Chemistry and Biochemistry*

Larry Lee, *Associate Professor Emeritus of Mathematics and Statistics*

Mark Lesley, *Associate Professor Emeritus of Mathematics and Statistics*

Gerald Levy, *Professor Emeritus of Biological Sciences*

Linda Lane Lilley, *Associate Professor Emerita of Nursing*

Elizabeth Lipsmeyer, *Associate Professor Emerita of Art*

Lucien X. Lombardo, *Professor Emeritus of Sociology and Criminal Justice*

Christopher W. Lovell, *Associate Professor Emeritus of Educational Leadership and Counseling*

Cameron A. Lowe, *Associate Professor Emeritus of Dental Hygiene and Dental Assisting*

James G. Luton, *Professor Emeritus of Dental Hygiene*

Robert H. MacDonald, *Professor Emeritus of Educational Curriculum and Instruction*

Jean A. Major, *University Librarian Emerita*

Harold G. Marshall, *Morgan Professor Emeritus and Professor Emeritus of Biological Sciences*

Otto B. Martinson, *Professor Emeritus of Accounting*

A. Warren Matthews, *Professor Emeritus of Philosophy and Religious Studies*

Steven D. Maurer, *Professor Emeritus of Management*

R. Bruce McAfee, *Professor Emeritus of Management*

Vernon A. McCart, *Fine and Performing Arts Reference Librarian and Librarian III Emeritus*

Linda F. McGreevy, *Professor Emerita of Art*

Timothy C. McKee, *Associate Professor Emeritus of Accounting*

James J. McNally, *Professor Emeritus of English*

Griffith J. McRee, *Associate Professor Emeritus of Electrical and Computer Engineering*

John R. McSweeney, *Professor Emeritus of Educational Leadership and Counseling*

Chuh Mei, *Eminent Scholar Emeritus and Professor Emeritus of Aerospace Engineering*

Regula A. Meier, *Associate Professor Emerita of Foreign Languages and Literatures*

Robert F. Michel, *Associate Professor Emeritus of Engineering Technology*

Peter J. Mikulka, *Professor Emeritus of Psychology*

Taj O. Mohieldin, *Professor Emeritus of Engineering Technology*

Raymond F. Morgan, *Professor Emeritus of Educational Curriculum and Instruction*

Ula K. Motekat, *Professor Emerita of Accounting*

G. E. Mullin, *Professor Emeritus of Economics*

Donald A. Myers, *Professor Emeritus of Teaching and Learning*

Joyce Neff, *Professor Emerita of English*

Ali Nowroozi, *Professor Emeritus of Ocean, Earth and Atmospheric Sciences*

George F. Oertel, *Professor Emeritus of Ocean, Earth and Atmospheric Sciences*

Donald Ogdon, *Professor Emeritus of Psychology*

C. Michael Overstreet, *Associate Professor Emeritus of Computer Science*

Allan Owen, *Associate Professor Emeritus of Music*

Richard A. Palmer, *Assistant Professor Emeritus of Chemistry and Biochemistry*

Elizabeth G. Pappas, *Associate Professor Emerita of Music*

Kathy L. Pearson, *University Professor Emerita and Associate Professor Emerita of History*

Victor A. Pickett, *Professor Emeritus of Art*

Norman H. Pollock, *Associate Professor Emeritus of History*

W. Maurice Pritchard, *Professor Emeritus of Physics*

Harold J. Protsman, *Professor Emeritus of Music*

Anthony J. Provenzano, *Professor Emeritus of Ocean, Earth and Atmospheric Sciences*

David Putney, *Associate Professor Emeritus of Philosophy and Religious Studies*

Philip Raisor, *Professor Emeritus of English*

John W. Ramsey, *Professor Emeritus of Political Science*

Anne Raymond-Savage, *Associate Professor Emerita of Educational Curriculum and Instruction and Vice Provost Emerita for Distance Learning*

William T. Reece, *Professor Emeritus of Accounting*

Lindsay Rettie, *Professor Emerita of Dental Hygiene and Dental Assisting and Dean Emerita of the College of Health Sciences*

Carolyn H. Rhodes, *Professor Emerita of English and Women's Studies*

Ernest L. Rhodes, *Professor Emeritus of English*

John H. Richardson, *Associate Professor Emeritus of Biological Sciences*

Roger S. Richman, *Professor Emeritus of Urban Studies and Public Administration*

Betty R. Ricks, *Associate Professor Emerita of Management*

A. Sidney Roberts Jr., *Professor Emeritus of Mechanical Engineering*

Robert K. Rose, *Professor Emeritus of Biological Sciences*

Helen C. Rountree, *Professor Emerita of Anthropology*

Thomas C. Royer, *Eminent Scholar Emeritus and Slover Professor Emeritus of Ocean, Earth and Atmospheric Sciences*

Leonard I. Ruchelman, *Eminent Scholar Emeritus and Professor Emeritus of Urban Studies and Public Administration*

Murray Rudisill, *Professor Emeritus of Educational Curriculum and Instruction*

Joseph H. Rule, *Professor Emeritus of Ocean, Earth and Atmospheric Sciences*

Richard A. Rutyna, *Associate Professor Emeritus of History*

Annabel L. Sacks, *Director of Student Services Emerita*

Janis V. Sanchez-Hucles, *Professor Emerita of Psychology*

Allen G. Sandler, *Associate Professor Emeritus of Early Childhood, Speech-Language Pathology and Special Education*

Clifford C. Saunders, *Professor Emeritus of Sociology*

Judith S. Schapiro, *Professor Emerita of Child Study and Special Education*

Karl H. Schoenbach, *Eminent Scholar Emeritus and Professor Emeritus of Electrical and Computer Engineering*

Reiko M. Schwab, *Associate Professor Emerita of Educational Leadership and Counseling*

Ann V. Schwarz-Miller, *Associate Professor Emerita of Economics*

Joseph C. Sever, Jr., *Associate Professor Emeritus of Communication Disorders and Special Education*

Stewart N. T. Shen, *Professor Emeritus of Computer Science*

David L. Shores, *Professor Emeritus of English*

J. Taylor Sims, *Professor Emeritus of Marketing*

Theodore F. Smith, *Associate Professor Emeritus of Marketing*

Ronald W. Snapp, *Associate Professor Emeritus of Art*

Petra Snowden, *Associate Professor Emerita of Educational Leadership and Counseling*

Daniel Sonenshine, *Professor Emeritus of Biological Sciences*

Randall S. Spencer, *Professor Emeritus of Ocean, Earth and Atmospheric Sciences*

Ulysses Van Spiva, *Professor Emeritus of Educational Leadership and Counseling and Dean Emeritus of the Darden College of Education*

William D. Stanley, *Eminent Professor Emeritus of Engineering Technology*

Peter C. Stewart, *Associate Professor Emeritus of History*

John W. Stoughton, *Professor Emeritus of Electrical and Computer Engineering*

Raymond S. Strangways, *Professor Emeritus of Economics*

R. James Swanson, *University Professor Emeritus and Professor Emeritus of Biological Sciences*

James R. Sweeney, *Associate Professor Emeritus of History*

John J. Swetits, *Professor Emeritus of Mathematics and Statistics*

Donald Swift, *Eminent Scholar Emeritus and Professor Emeritus of Ocean, Earth and Atmospheric Sciences*

J. Albert Tatem Jr., *Associate Professor Emeritus of Health, Physical Education, and Recreation*

William H. Thornton, *Associate Professor Emeritus of Engineering Technology*

Shunichi Toida, *Associate Professor Emeritus of Computer Science*

Alfred Townsend, *Associate Professor Emeritus of Music*

Charlie G. Turner, *Associate Professor Emeritus of Economics*

John E. Turner, *Associate Professor Emeritus of Occupational and Technical Studies*

Margaret Daugherty Van Damm, *Associate Professor Emerita of English*

Nancy L. Wade, *Associate Professor Emerita of Biological Sciences*

William Wagner, *Associate Professor Emeritus of Art*

Alice P. Wakefield, *Associate Professor Emerita of Teaching and Learning*

Katarina Wegar, *Associate Professor Emerita of Sociology and Criminal Justice*

Stanley E. Weinstein, *Professor Emeritus of Mathematics and Statistics*

Thomas L. Wells, *Associate Professor Emeritus of Political Science and Geography*

Frederick D. Whitehurst, *Professor Emeritus of Accounting*

J. Christian Wild, *Associate Professor Emeritus of Computer Science*

Melvin H. Williams, *Eminent Scholar Emeritus and Professor Emeritus of Exercise Science, Physical Education and Recreation*

Roy L. Williams, *Professor Emeritus of Chemistry and Biochemistry*

Harold S. Wilson, *Professor Emeritus of History*

Jack H. Wilson, *Professor Emeritus of English*

Larry W. Wilson, *Associate Professor Emeritus of Computer Science*

Denny T. Wolfe Jr., *Professor Emeritus of Educational Curriculum and Instruction*

Lloyd Wolfenbarger Jr., *Professor Emeritus of Biological Sciences*

George T. Wong, *Professor Emeritus of Ocean, Earth and Atmospheric Sciences*

Robert J. Wunderlin, *Associate Professor Emeritus of Psychology*

Betty J. H. Yarborough, *Eminent Scholar Emerita and Constance and Colgate Darden Professor Emerita of Education*

James H. Yuan, *Professor Emeritus of Chemistry and Biochemistry*

Helen Yura-Petro, *Professor Emerita of Nursing*

Michelle L. Zimmerman, *Associate Professor Emerita of Nursing*

# Course Descriptions

## Courses of Instruction

Courses in which the leading number is zero, e.g. 050, are nondegree noncredit courses primarily in developmental studies.

Courses numbered 100 are primarily for freshmen, 200 for sophomores, 300 for juniors, 400 for seniors. 500-, 600-, 700-, and 800-level courses are generally for graduate credit. Courses at the 500 level correspond to undergraduate 400-level courses; however, a different grading scale is used for 500-level registrants. Additional and higher quality work is required in 500-level courses.

General education courses are designated by the fourth digit in the course number. At the lower division, the following designations are used: for Skills courses, C=Composition, F=Language and Culture, G=Information Literacy and Research, M=Mathematics, and R=Oral Communication; for Ways of Knowing courses, A=Human Creativity, H=Interpreting the Past, L=Literature, N=The Nature of Science, P and E=Philosophy and Ethics, S=Human Behavior, and T=Impact of Technology. Writing intensive courses are designated by a W in the fourth digit.

Some of the courses listed indicate the semester the course will be offered. Every attempt will be made to offer the courses in the semester(s) indicated. However, this may not always be possible. Please consult the academic advisor or graduate program director for course offerings.

The University reserves the right to withdraw any course for which there is insufficient registration.

## AAST - African-American Studies

### AFRICAN-AMERICAN STUDIES Courses

#### **AAST 100S. Introduction to African American Studies. 3 Credits.**

An interdisciplinary examination of the African American experience in America. The course examines the historical and contemporary conditions of African American people. It also explores the various modes of artistic expression, values and philosophical underpinnings of African American culture.

#### **AAST 305. Africa in Transition. 3 Credits.**

This course is designed to examine various contemporary social movements in Africa from the 1960s to the present day. In addition, this course examines how these social movements have impacted various groups' human, cultural, economic, political, and social capital. Prerequisites: General education human behavior course.

#### **AAST 310. Human Rights and Social Change in Africa. 3 Credits.**

This course examines historical social movements in Africa such as economic, ethnic, women's, political, and religious social movements. This course will also link micro-level, meso-level, and macro-level implications for the social structures and cultures of various African nations and communities. Prerequisites: General Education human behavior course.

#### **AAST 320. Introduction to Research Methods. 3 Credits.**

This course is an introduction to social research methods. The primary purpose of this course is to survey the major research designs and research techniques that are the core of contemporary approaches used to study social phenomena as well as the lives and experiences of African Americans. Ethical implications of social research and data analysis will also be covered. Prerequisites: General Education human behavior course.

#### **AAST 368. Internship. 3 Credits.**

Individual practical experience in community-based organizations, public bureaucracies, administrative agencies and other organizations and firms. Student can gain exposure in the not-for-profit and profit sectors. (Qualifies as a CAP experience.) Prerequisites: Permission of program director.

#### **AAST 395. Topics in African American Studies. 3 Credits.**

These courses are open to majors and non-majors. Ethnic studies majors may take these courses to satisfy requirements for the concentration. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisites: AAST 100S or permission of the instructor.

#### **AAST 396. Topics in African American Studies. 3 Credits.**

These courses are open to majors and non-majors. Ethnic studies majors may take these courses to satisfy requirements for the concentration. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisites: AAST 100S or permission of the instructor.

#### **AAST 410. Africana Intellectual Thought and Economic Development. 3 Credits.**

This course examines Africana philosophical and theoretical thought as it pertains to issues of race, labor and production. Through an examination of the social and economic legacy of slavery and colonialism, this course investigates how systems of exploitation have influenced the underdevelopment of Africa, the Caribbean and North America in its contribution to Western Capitalism. Prerequisites: General Education human behavior course.

#### **AAST 420W. African American Political and Social Thought. 3 Credits.**

This course is designed to introduce students to the historical and contemporary experiences of "Blackness" as it has been constructed, contested and affirmed in various historical, political and narrative contexts. Embracing the theme of duality, the course examines what it means for a culture and people to be both integral to and excluded from the American political and social community. (This is a writing intensive course.) Prerequisites: Grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C and a General Education human behavior course.

#### **AAST 490. Senior Seminar. 3 Credits.**

This course will introduce students to the key concepts involved in developing and executing an interdisciplinary research project. Students will read and interpret research literature, execute a research project, write a final research paper, and present research findings in a professional setting. Prerequisites: AAST 320.

#### **AAST 495. Topics in African American Studies. 3 Credits.**

This course focuses on a variety of selected topics in African American Studies. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisites: Senior standing.

#### **AAST 497/597. Independent Study. 1-3 Credits.**

Students are exposed to opportunities to conduct independent research and/or study in areas focused on the political, social and cultural experiences of people of African descent in the U.S. and the African Diaspora. Prerequisites: Junior standing or permission of instructor.

## ACCT - Accounting

### ACCOUNTING Courses

#### **ACCT 201. Principles of Financial Accounting. 3 Credits.**

Elementary financial accounting concepts and procedures used in the preparation of financial statements; elementary financial statement analysis; and use of financial accounting information for special-purpose decision making. Prerequisites: completion of MATH 102M, STAT 130M or qualified to enroll in MATH 162M.

#### **ACCT 202. Principles of Managerial Accounting. 3 Credits.**

Elementary managerial accounting concepts and procedures; operational accounting; and use of accounting data for special-purpose internal decision making. Prerequisite: completion of MATH 102M, STAT 130M or qualified to enroll in MATH 162M, and ACCT 201 or ACCT 226.

**ACCT 226. Honors: Principles of Financial Accounting. 3 Credits.**

Open only to students in the Honors College. Special honors section of ACCT 201. Elementary financial accounting concepts and procedures used in the preparation of financial statements; elementary financial statement analysis; and use of financial accounting information for special-purpose decision making. Prerequisites: completion of MATH 102M, STAT 130M or qualified to enroll in MATH 162M.

**ACCT 227. Honors: Principles of Managerial Accounting. 3 Credits.**

Open only to students in the Honors College. Special honors section of ACCT 202. Elementary managerial accounting concepts and procedures; operational accounting; and use of accounting data for special-purpose internal decision making. Prerequisites: completion of MATH 102M, STAT 130M or qualified to enroll in MATH 162M, and ACCT 201 or ACCT 226.

**ACCT 301. Intermediate Accounting I. 3 Credits.**

Preparation of financial statements and other reports in accordance with prevailing accounting standards established by the accounting profession. Those who have not had ACCT 201 and ACCT 202 within two years of enrolling in ACCT 301 are strongly encouraged to retake these courses in preparation for ACCT 301. (Students must have a C or better in ACCT 301 to proceed to other upper level accounting courses requiring 301.) Prerequisites: ACCT 201 and ACCT 202 or ACCT 226 and ACCT 227, and a declared major in the University or permission of the Dean's Office.

**ACCT 302. Intermediate Accounting II. 3 Credits.**

Preparation of financial statements and other reports in accordance with prevailing accounting standards established by the accounting profession. (Students must have a C- or better grade in ACCT 302 to graduate with a concentration in accounting.) Prerequisites: ACCT 201 and ACCT 202 or ACCT 226 and ACCT 227; ACCT 301 with a C or better; and a declared major in the University or permission of the Dean's Office.

**ACCT 311. Managerial Accounting. 3 Credits.**

This course focuses on recording and allocating costs within traditional managerial accounting systems. Common and joint cost allocations are performed under job order, process and standard costing systems. Income models are developed for exploring cost-volume-profit relationships. (Students must have a C- or better in ACCT 311 to graduate with a concentration in accounting.) Prerequisites: ACCT 201 and ACCT 202 or ACCT 226 and ACCT 227; BNAL 206; junior standing; and a declared major in the University or permission of the Dean's Office.

**ACCT 367. Cooperative Education. 1-3 Credits.**

May be repeated for credit. Available for pass/fail grading only. (Qualifies as a CAP experience.) Prerequisites: ACCT 301 with a C or better and a declared major in the University or permission of the Dean's Office; approval of Career Management Center; transfer students must have completed one semester at Old Dominion University.

**ACCT 368. Student Internship. 1-3 Credits.**

Student participation in a professional work experience. Approval for enrollment and allowable credits are determined by the department and the Career Management Center in the semester prior to enrollment. (Qualifies as a CAP experience.) Prerequisites: ACCT 301 with a C or better and a declared major in the University or permission of the Dean's Office; transfer students must have completed a minimum of one semester at Old Dominion University.

**ACCT 369. Practicum. 1-3 Credits.**

Student participation in a professional work experience. Approval for enrollment and allowable credits are determined by the department CAP adviser and the Career Management Center in the semester prior to enrollment. (Qualifies as a CAP experience.) Prerequisites: ACCT 301 with a C or better, junior standing and permission of the chief departmental advisor; transfer students must have completed a minimum of one semester at Old Dominion University.

**ACCT 405/505. Accounting and Auditing in the Public/Nonprofit Sector. 3 Credits.**

The application of accounting principles to governmental funds and not-for-profit organizations. Emphasis is placed on budgeting and control as well as auditing concerns for such entities. (Students must have a C- or better in ACCT 405 to graduate with a concentration in accounting.) Prerequisites: ACCT 301 with a C or better, senior standing, and a declared major in the University or permission of the Dean's Office.

**ACCT 411/511. Financial Auditing. 3 Credits.**

Standards and ethics of the public accounting profession, generally accepted auditing standards, and public reporting are covered, as well as exposure to other types of auditing such as operational and compliance auditing. (Students must have a C- or better in ACCT 411 to graduate with a concentration in accounting.) Prerequisites: ACCT 301 with a C or better, senior standing, and a declared major in the University or permission of the Dean's Office.

**ACCT 421/521. Taxation. 3 Credits.**

An analysis of federal income tax law and its application to personal and business tax situations. Reconciliation of tax and accounting concepts. (Students must have a C- or better in ACCT 421 to graduate with a concentration in accounting.) Prerequisites: ACCT 301 with a C or better for accounting majors or FIN 431 with a C or better, and a declared major in the University or permission of the Dean's Office.

**ACCT 422/522. Federal Income Taxation of Individuals and Business Entities. 3 Credits.**

An analysis of federal income tax laws and its application to individuals and business entities. (Students must have a C- or better in ACCT 422 to graduate with a concentration in accounting.) Prerequisites: ACCT 421 or ACCT 521 and a declared major in the University or permission of the Dean's Office.

**ACCT 450/550. International and Advanced Accounting. 3 Credits.**

The study of accounting for international operations and business combinations. (Students must have a C- or better in ACCT 450 to graduate with a concentration in accounting.) Prerequisites: ACCT 301 with a C or better, ACCT 302, senior standing and a declared major in the University or permission of the Dean's Office.

**ACCT 460. Accounting Information Systems. 3 Credits.**

The theoretical and practical approaches to the analysis, design, and implementation of manual and/or computerized accounting systems. Emphasis is placed on the investigation and documentation of internal controls, accounting cycle attributes, and auditing techniques for computer-based systems. Individual projects include comprehensive documentation of an accounting application and two case studies using a current financial accounting software package. The group project involves development of an accounting system for a specific application and its presentation to the class. This class qualifies as a CAP experience. Students will complete a comprehensive final examination on materials covered in ACCT 301, 302, 311, 421, and 460. (Students must have a C- or better in ACCT 460 to graduate with a concentration in accounting.) Prerequisites: ACCT 301 with a C or better, ACCT 302, ACCT 311, ACCT 421 and IT 360T, or permission of the instructor and a declared major in the University or permission of the Dean's Office. Pre- or corequisite: ACCT 421.

**ACCT 495. Selected Topics in Accounting. 1-3 Credits.**

Study designed for students desiring additional work in an area of particular interest in accounting. This course may not be substituted for any required accounting course. (Students must have a C- or better in ACCT 495 to graduate.) Prerequisites: ACCT 301 with a C or better and a declared major in the University or permission of the Dean's Office.

# AL - Arts and Letters

## ARTS AND LETTERS Courses

### **AL 100. Introduction to Arts and Letters: Scholarship in the Disciplines. 1 Credit.**

Through guest presentations from each major department in the college, the Career Management Center and other University resources, students will learn about majors, minors, career options, effective goal-setting, study skills, and time management strategies. Coursework includes weekly reading and journal assignments, attendance at campus events, and visits to campus resources.

### **AL 195. Topics. 3 Credits.**

A topics course in the area of arts and letters.

### **AL 196. Topics. 3 Credits.**

A topics course in the area of arts and letters.

### **AL 295. Topics. 3 Credits.**

A topics course in the area of arts and letters.

### **AL 296. Topics. 3 Credits.**

A topics course in the area of arts and letters.

### **AL 367. Internship in Peer Advising. 1-3 Credits.**

Students receive training in communications, counseling practices and College and University resources and services, and then serve as Peer Advisors to undecided prospective Arts & Letters students. Up to 150 hours required. Weekly staff meetings, readings, and a peer advising journal are also required. (Qualifies as a CAP experience.) Prerequisites: Approval of the College Director of Academic Advising.

### **AL 395. Topics in Humanities. 3 Credits.**

An interdisciplinary study of selected topics in the humanities. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to academic advisors. Prerequisites: Junior standing or permission of the instructor.

### **AL 396. Topics in Social Studies. 3 Credits.**

An interdisciplinary study of selected topics in social studies. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to academic advisors. Prerequisites: Junior standing or permission of the instructor.

### **AL 495/595. Topics in Humanities. 1-3 Credits.**

An advanced study of selected topics in humanities. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to academic advisors. Prerequisites: Junior standing or permission of the instructor.

### **AL 496/596. Topics in Social Studies. 3 Credits.**

An advanced study of selected topics in social studies. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to academic advisors. Prerequisites: Junior standing or permission of the instructor.

### **AL 497/597. Tutorial Work in Arts and Letters Topics. 3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: Junior standing or permission of the instructor.

# AMST - American Studies

## AMERICAN STUDIES Courses

### **AMST 300. Perspectives in American Studies. 3 Credits.**

An exploration of current methodological approaches utilized in the interdisciplinary field of American Studies. Through integrative themes that cut across time, place and cultural identity, this course will allow students to build a working definition of civilization in the United States. Prerequisites: ENGL 110C or HIST 104H or permission of instructor.

### **AMST 495. Topics. 1-3 Credits.**

Rotating course content in American Studies, with interdisciplinary focus. Course can be used to fulfill a requirement in the American Studies minor. Prerequisites: ENGL 211C or ENGL 231C.

# ANTR - Anthropology

## ANTHROPOLOGY Courses

### **ANTR 110S. Introduction to Anthropology. 3 Credits.**

A survey of what we know about the emergence of humans: where we came from; how we developed physically and why; how human cultures became more complex through time; and the variety of human ways of life today.

### **ANTR 226S. Honors: Human Origins and Ways of Life An Introduction to Anthropology. 3 Credits.**

A special Honors section of ANTR 110S. Open only to students in the Honors College.

### **ANTR 300. Human Cultures Around the World. 3 Credits.**

A cross-cultural examination of human economic, social and ideological behavior, with the aim of showing both human cultural diversity and the ways in which the various parts of culture (e.g., trade, marriage practices, witchcraft, etc.) go together to make coherent wholes. Prerequisites: ANTR 110S.

### **ANTR 303. Biological Anthropology. 3 Credits.**

Human physical and cultural evolution from our earliest primate beginnings through the appearance of anatomically modern humans. Prerequisites: ANTR 110S.

### **ANTR 304. Digging Up the Past. 3 Credits.**

A comprehensive study of the philosophical and scientific foundations of archaeology and of a general prehistory to which they are applied. The course includes discussions of methods and theories used to reconstruct ancient Egypt and Mexico and other early cultures. Prerequisites: ANTR 110S or completion of the human behavior requirement or permission of the instructor.

### **ANTR 305. North American Archaeology. 3 Credits.**

The study of the prehistory of native cultures north of Mexico from the peopling of the New World to contact with Europeans. Prerequisites: ANTR 110S or completion of the human behavior requirement or permission of the instructor.

### **ANTR 320. The Sexes in Cross-Cultural Perspective. 3 Credits.**

An examination of the socialization and perpetuation of sex roles in different societies around the world. The course investigates issues of gender and sexuality throughout an individual's life. Prerequisites: ANTR 110S or completion of the human behavior perspective or permission of the instructor.

### **ANTR 395. Topics in Anthropology. 1-3 Credits.**

A study of selected topics, designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisites: ANTR 110S or permission of instructor.

### **ANTR 396. Topics in Anthropology. 1-3 Credits.**

A study of selected topics, designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisites: ANTR 110S or permission of instructor.

### **ANTR 495/595. Topics in Anthropology. 1-3 Credits.**

A study of selected topics designed for either majors or nonmajors. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisites: Senior standing or approval of the department chair.

### **ANTR 496/596. Topics in Anthropology. 1-3 Credits.**

A study of selected topics designed for either majors or nonmajors. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisites: Senior standing or approval of the department chair.

### **ANTR 497/597. Tutorial Work in Special Topics in Anthropology. 3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: Senior standing and approval of department chair.

**ANTR 498/598. Tutorial Work in Special Topics in Anthropology. 3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: Senior standing and approval of department chair.

## ARAB - Arabic

### ARABIC Courses

**ARAB 111F. Beginning Arabic. 6 Credits.**

Aural comprehension, oral drill and discussion of grammar principles, written exercises, and reading assignments.

**ARAB 195. Topics. 1-6 Credits.**

Special topics in Arabic.

**ARAB 212. Intermediate Arabic. 6 Credits.**

Arabic language beyond the beginning level. Prerequisites: ARAB 111F.

**ARAB 295. Topics. 1-6 Credits.**

A topics course in Arabic, with topics announced prior to the semester in which they are offered.

**ARAB 311. Advanced Arabic Language and Culture I. 3 Credits.**

This course explores the cultures and language related to Arabic. Prerequisites: ARAB 212.

**ARAB 312. Advanced Arabic Language and Culture II. 3 Credits.**

This course continues the exploration of language and cultures related to Arabic. Prerequisites: ARAB 311.

**ARAB 395. Topics in Arabic. 1-6 Credits.**

A study of selected topics for elective credit. These courses will appear in the course schedule booklet and will be more fully described in a booklet distributed to academic advisors. Prerequisites: ARAB 212 or equivalent.

**ARAB 495. Topics in Arabic. 1-6 Credits.**

A study of selected topics for elective credit. These courses will appear in the course schedule and will be more fully described in a booklet distributed to academic advisors.

## ARTH - Art History

### ART HISTORY Courses

**ARTH 121A. Introduction to the Visual Arts. 3 Credits.**

An introduction to the various media, techniques, styles, content, and contexts in the visual arts as they are manifested in the world's cultures.

**ARTH 127A. Honors: Introduction to the Visual Arts. 3 Credits.**

An introduction to the various media, techniques, styles, content, and contexts in the visual arts as they are manifested in the world's cultures. Open only to students in the Honors College.

**ARTH 195. Topics. 1-3 Credits.**

Special topics in art history.

**ARTH 211. Ancient and Medieval Art. 3 Credits.**

A survey of the history of art from the ancient cultures of the Mediterranean world to the Gothic period of the Middle Ages. Museum visits and writing assignments will help to develop students' analytical, critical and writing skills. Students will become information literate through a combination of instruction and assignments. Together with ARTH 212, this course will fulfill the Information Literacy and Research general education requirement in the major. Prerequisites: ENGL 211C or ENGL 221C or ENGL 231C.

**ARTH 212. Renaissance and Modern Art. 3 Credits.**

A survey of the art of the Renaissance and Baroque to the Modern World, culminating in an overview of contemporary art. Museum visits and writing assignments will help to develop students' analytical, critical and writing skills. Students will become information literate through a combination of instruction and assignments. Completion of ARTH 211 and ARTH 212 will fulfill the Information Literacy and Research general education requirement within the major. Prerequisites: ARTH 211.

**ARTH 309. Architecture of the Middle Ages. 3 Credits.**

This course traces the history and construction techniques of medieval buildings from 300-1500 A.D. It examines the wood-roofed building, centrally planned domed structures, innovations in plan, the rediscovery of stone vaulting techniques and culminates in a study of the pointed ribbon groin vaults and stone skeletal systems of the Gothic cathedrals. Prerequisites: ARTH 211 or permission of the instructor.

**ARTH 310. Women in the Visual Arts. 3 Credits.**

The contributions of women in the various fields in the visual arts--painting, graphics, sculpture, architecture, and the crafts. Prerequisites: ARTH 121A, ARTH 211 or ARTH 212 or permission of the instructor.

**ARTH 314. 15th and 16th Century Art in Northern Europe. 3 Credits.**

The painting, sculpture, and graphics of the Netherlands, France and Germany from the fifteenth to the mid-sixteenth century with discussion of artists such as Jan van Eyck, Hieronymus Bosch, Pieter Bruegel, and Albrecht Durer. Prerequisites: ARTH 211 or permission of the instructor. Pre- or corequisite: ARTH 212 or permission of the instructor.

**ARTH 315. Early Renaissance Art in Italy. 3 Credits.**

Painting, sculpture, and architecture in 14th- and 15th-century Italy from Giotto to Botticelli, among others. Prerequisites: ARTH 211 or permission of the instructor. Pre- or corequisites: ARTH 212 or permission of the instructor.

**ARTH 316. High Renaissance Art in Italy. 3 Credits.**

This course is a survey of High Renaissance Art in Italy (roughly 1473 to 1520), focusing primarily on the recognized major artists or "masters" of the High Renaissance: Leonardo da Vinci, Michelangelo, Raphael, and Titian. Prerequisites: ARTH 211 or permission of the instructor. Pre- or corequisites: ARTH 212 or permission of the instructor.

**ARTH 317. Mannerism and Late Renaissance Art in Italy. 3 Credits.**

The works of Leonardo, Michelangelo, and Raphael brought the Renaissance to its height, but by 1520, two of these masters were dead. It is in this aftermath - post-1520 - that a new generation of artists arose revolutionizing the art world. This course is a survey of late sixteenth-century art in Italy. Prerequisites: ARTH 211 or permission of the instructor. Pre- or corequisites: ARTH 212 or permission of the instructor.

**ARTH 318. Baroque Art in Italy and Spain. 3 Credits.**

This course is a survey of Baroque Art in Italy and Spain. Material includes painting, sculpture, and architecture of the seventeenth and early eighteenth centuries, with discussion of artists such as Caravaggio, Annibale Carracci, Gian Lorenzo Bernini, Francesco Borromini, Diego Velazquez, Jusepe de Ribera, and Francisco de Zurbaran, among others. Prerequisites: ARTH 211 or permission by instructor. Pre- or corequisites: ARTH 212 or permission by instructor.

**ARTH 319. Baroque Art in Northern Europe. 3 Credits.**

This course is a survey of Baroque Art in Northern Europe. Materials include painting, sculpture, and architecture of the seventeenth and early eighteenth centuries, with discussion of artists such as Peter Paul Rubens, Rembrandt, Vermeer, and Poussin, among others. Prerequisites: ARTH 211 or permission of the instructor. Pre- or corequisites: ARTH 212 or permission of the instructor.

**ARTH 320W. History of Design. 3 Credits.**

A study of the historical development of the design arts in both utilitarian and communicative areas including graphic design and advertising, crafts, film and video, the decorative arts, fashion, furniture, and the built environment. This is a writing intensive course. Prerequisites: Grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; ARTH 211, ARTH 212, or permission of instructor.

**ARTH 323. Nineteenth-Century European Art. 3 Credits.**

Survey of the mainstreams of European art during the late eighteenth and nineteenth centuries, including discussion of architecture, sculpture, painting, and the graphic arts. Prerequisites: ARTH 212 or permission of the instructor.

**ARTH 324. Twentieth-Century Art. 3 Credits.**

A survey of late-nineteenth- and early-twentieth-century art and architecture, with special emphasis on the discourses of modernism and postmodernism. Prerequisites: ARTH 212 or permission of the instructor.

**ARTH 325. American Art Before 1865. 3 Credits.**

A survey of American art from the colonial period through the Civil War, focusing on the development of a native style in painting, sculpture, the decorative arts, and architecture. Prerequisites: ARTH 121A, ARTH 212 or permission of the instructor.

**ARTH 326. American Art Since 1865. 3 Credits.**

A survey of American art from the Civil War to the present, focusing on the development of internationally-influenced styles in painting, sculpture, photography, printmaking, architecture, and the decorative arts. Prerequisites: ARTH 212 or permission of the instructor.

**ARTH 327. History of Photography. 3 Credits.**

An examination of the development of photography as a scientific curiosity, a tool for artists, and as a fine art in itself from the early nineteenth century to the present day. Prerequisites: ARTH 121A, ARTH 212 or permission of the instructor.

**ARTH 350W. Art Criticism. 3 Credits.**

A study of the analysis, theoretical approaches, methodologies, and effects of the practice of art criticism. This is a writing-intensive course. Prerequisites: ARTH 211, ARTH 212 or permission of the instructor; grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**ARTH 351W. Research Methods in Art History. 3 Credits.**

An investigation of past and present approaches to scholarship in art history. Students participate in a series of writing assignments designed to strengthen their research and writing skills, culminating with the presentation of original research in oral and written form. This is a writing intensive course. Prerequisites: ARTH 211 or ARTH 212; grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**ARTH 360. Asian Art. 3 Credits.**

An introduction to the architecture, sculpture, calligraphy, pottery, ink painting, miniature painting, and gardens of India, China, and Japan. Emphasis will be placed on the connections among the cultures: Buddhism and pilgrimage, the importance of the scholar painters, the role of trade routes and the emergence of native writing. Cross-listed with ASIA 360. Prerequisites: ARTH 121A, ARTH 211, ARTH 212 or permission of instructor.

**ARTH 368. Internship. 1-3 Credits.**

A structured work experience in a museum, gallery, archive, or related environment, either with or without remuneration. Criteria for evaluation will be determined by work supervisor and cooperating faculty advisor. May be repeated for credit. Available for pass/fail grading only. Qualifies as a CAP experience. Prerequisites: Approval of the program director and Career Management.

**ARTH 369. Practicum. 1-3 Credits.**

A specialized field activity outside of the classroom. Qualifies as a CAP experience. Prerequisites: Approval of the program director.

**ARTH 377. Extracurricular Studies. 1-6 Credits.**

An extracurricular activity approved for credit based on objectives, criteria, and evaluative procedures as formally determined by the department and the student prior to the semester in which the activity is to take place. Such credit is subject to review by the provost. Qualifies as a CAP experience. Prerequisites: Approval of the program director.

**ARTH 378. Extracurricular Studies. 1-6 Credits.**

An extracurricular activity approved for credit based on objectives, criteria, and evaluative procedures as formally determined by the department and the student prior to the semester in which the activity is to take place. Such credit is subject to review by the provost. Qualifies as a CAP experience. Prerequisites: Approval of the program director.

**ARTH 395. Topics in Art History. 3 Credits.**

A study of selected topics in art history to be specified in the class schedule each semester. May be repeated for credit as topics vary. Prerequisites: ARTH 211, ARTH 212 or permission of the instructor.

**ARTH 396. Topics in Art History. 3 Credits.**

A study of selected topics in art history to be specified in the class schedule each semester. May be repeated for credit as topics vary. Prerequisites: ARTH 211, ARTH 212, or permission of the instructor.

**ARTH 421/521. Early Medieval Art. 3 Credits.**

The art and architecture of the Latin West and Byzantium from the early Christian centuries and the fall of Rome to the Carolingian and Ottoman empire and the fully developed Romanesque of the twelfth century, including manuscripts, metalwork, ivories and enamels. Prerequisites: ARTH 211 or permission of the instructor.

**ARTH 422/522. Gothic Art and Architecture. 3 Credits.**

The painting, sculpture, and architecture of the Gothic period from the mid-twelfth century to the refined and courtly art of the later International Style in France, England, Germany, and Italy as seen in both the monumental and the decorative arts. Prerequisites: ARTH 211 or permission of the instructor.

**ARTH 423/523. Romanesque Art and Architecture. 3 Credits.**

The art and architecture of the period from about 1000 to 1150 in western Europe, including monumental architectural forms, monumental painting and increased book production. Prerequisites: ARTH 211.

**ARTH 434/534. Romantic Architecture. 3 Credits.**

A survey of the aesthetic, technological, and social forces that transformed international architecture in the 18th and 19th centuries. Prerequisites: ARTH 121A or ARTH 212.

**ARTH 435W/535. Modern Architecture. 3 Credits.**

An examination of the architecture, planning, and related design of the twentieth and twenty-first centuries around the globe. Special emphasis is placed on the formation of the international style between the world wars and its disintegration in the recent past. (This is a writing intensive course; the course also satisfies the general education impact of technology requirement.) Prerequisites: ARTH 121A or ARTH 212; grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**ARTH 438/538. Fin de Siecle European Art. 3 Credits.**

An intensive examination of the major styles, movements, and individuals working in Europe's avant-garde at the end of the 19th century to the beginning of the first world war. Prerequisites: ARTH 212.

**ARTH 439/539. Art Between the Wars: 1919-1939. 3 Credits.**

A study of the international movements in visual arts and design in the interwar years from Dada to the New York World's Fair. Prerequisites: ARTH 212, ARTH 324 or permission of instructor.

**ARTH 440/540. Mid-Century Modern Art (1940-1960). 3 Credits.**

An intensive study of the two decades when modernist styles and theories in art, design, and architecture were codified and challenged internationally. Prerequisites: ARTH 212.

**ARTH 460/560. Art Since 1960. 3 Credits.**

Lectures and critical discussion of the development and configurations of the various styles emergent since 1960, both in America and Europe. Prerequisites: ARTH 212, ARTH 324 or permission of the instructor.

**ARTH 480. Senior Thesis. 3 Credits.**

The research and writing of a thesis on an advanced topic in art history to be determined by the student in concert with a faculty advisor. The thesis option is intended for students preparing for graduate study in the field, and it may be taken in place of another upper-level art history elective within the major. Prerequisites: Senior standing; 12 hours of art history electives at the 300 and 400 levels.

**ARTH 495/595. Topics in Art History. 3 Credits.**

A study of selected topics in art history to be specified in the class schedule each semester. May be repeated for credit as topics vary. Prerequisites: ARTH 211, ARTH 212, or permission of the instructor.

**ARTH 496/596. Topics in Art History. 3 Credits.**

A study of selected topics in art history to be specified in the class schedule each semester. May be repeated for credit as topics vary. Prerequisites: ARTH 211, ARTH 212, or permission of the instructor.

**ARTH 497/597. Tutorial Work in Art History. 3 Credits.**

Independent research on a topic to be selected under the guidance of the instructor. Prerequisites: Permission of the instructor.

**ARTH 498/598. Tutorial Work in Art History. 3 Credits.**

Independent research on a topic to be selected under the guidance of the instructor. Prerequisites: Permission of the instructor.



# ARTS - Art, Studio

## ART, STUDIO Courses

### **ARTS 122A. Visual Communication. 3 Credits.**

An introduction to essential themes and means of visual communication in the fine arts with an emphasis on studio experience in techniques from the different disciplines in studio art.

### **ARTS 126A. Honors: Art as Experience. 3 Credits.**

Open only to students in the Honors College. A special honors section of ARTS 122A.

### **ARTS 202. Two-Dimensional Design. 3 Credits.**

A basic course examining the relation of shape and value in a two-dimensional environment.

### **ARTS 203. Three-Dimensional Design. 3 Credits.**

A basic course examining the relation of form and structure in a three-dimensional environment.

### **ARTS 211. Introduction to Digital Photography. 3 Credits.**

Introduction to conceptual, technical and historical aspects of photography as a creative medium using digital technology. Technical areas covered include camera use, digital image processing, and digital printing. Class time is divided between demonstrations of applicable skills, in class work time, lectures and critiques. Prerequisites: ARTS 279 or permission of the instructor.

### **ARTS 231. Fundamentals of Drawing. 3 Credits.**

A study of basic principles, materials and historical techniques for drawing with an emphasis on line, value studies, volumetric analysis and perspective. Students will learn to draw proportionally and descriptively with increased knowledge of the relationship between object and image.

### **ARTS 241. Fundamentals of Painting. 3 Credits.**

An introduction to image making through the application of painting media, techniques and styles. Pre- or corequisite: ARTS 202 or ARTS 231 and ARTS 304.

### **ARTS 251. Printmaking: Introduction to Screenprint. 3 Credits.**

An introduction to screenprinting techniques and stencil systems using water-based inks. Pre- or corequisite: ARTS 202 and ARTS 304.

### **ARTS 252. Printmaking: Introduction to Lithography. 3 Credits.**

An introduction to stone and metal plate lithographic techniques. Pre- or corequisite: ARTS 202 and ARTS 231.

### **ARTS 253. Alternative Print Techniques. 3 Credits.**

An introduction to non-traditional printmaking processes, both historical and contemporary. Processes may include solar plate lithography, stencil printing, pochoir, paper pulp printing, chine colle, monotype, monoprint, collography, cyanotype, and varieties of transfer printing such as digital and gum techniques. Prerequisites: ARTS 202 or ARTS 231.

### **ARTS 254. Printmaking: The Relief Print. 3 Credits.**

An introduction to basic relief printing techniques including woodcut, linocut, letterpress, and collograph. Pre- or corequisite: ARTS 202 and ARTS 231; one or both may be taken before; one may be taken as a corequisite.

### **ARTS 261. Introduction to Sculpture. 3 Credits.**

Conceptual thinking in three dimensions; the development of visual capacity and spatial sense through direct experience in materials. Pre- or corequisite: ARTS 202 and ARTS 203.

### **ARTS 263. Introduction to Ceramics. 3 Credits.**

A studio core course designed as an introduction to ceramics. Students will explore functional and sculptural techniques through handbuilding and wheel-throwing, as well as basic claybody, glaze and firing theory. Students will also develop a basic understanding of the historical and cultural aspects of ceramics. Prerequisites: ARTS 202.

### **ARTS 271. Introduction to Graphic Design. 3 Credits.**

This course is intended for art majors and art minors only. Exceptions must be approved by the instructor or the chief departmental advisor. It is an intensive study of the basic principles, theories and methods of graphic design. This includes a study of the characteristics of letterforms, compositional principles, and visual communication with sign, symbol, and image. Emphasis will be on developing visual concepts, formal values, use of materials, and craftsmanship. Prerequisites: ARTS 202, ARTS 231, ARTS 279 and ARTS 304.

### **ARTS 279. Fundamentals of Digital Art. 3 Credits.**

An introduction to the Macintosh computer and operating system and its applications to visual arts project production. Includes an overview of computer hardware and software used in print multimedia and imaging for visual communications and examines the impact of digital technologies upon art and design.

### **ARTS 281. Crafts 1: Fibers. 3 Credits.**

An introduction to various looms, tools, materials and techniques used in weaving and fabric dyeing; individual design projects.

### **ARTS 291. Crafts 1: Metalsmithing and Jewelry. 3 Credits.**

An introduction to the basic tools, materials and techniques used in centrifugal casting, soldering and piercing. Individual projects in silver, brass and copper.

### **ARTS 302. Design Application. 3 Credits.**

The application of basic design concepts to the solution of functional and environmental problems; individual and group projects. (Offered once per year.) Prerequisites: ARTS 202 and ARTS 203. Pre- or corequisite: ARTS 304.

### **ARTS 304. Color. 3 Credits.**

A study of the underlying principles of color interaction, color selection, contrast and harmonies, relationships between light, color and vision, as well as the basics of pigments, mixing, and color terminology. An option for the interdisciplinary minor, the Designed World. Prerequisites: ARTS 202 or ARTS 231 or permission of instructor.

### **ARTS 305. Elementary Art Education Methods and Classroom Management. 3 Credits.**

Designed for students majoring in art education and early childhood education, this course covers the conceptual foundations of art education in the early years. An exploration of art materials and teaching methods for kindergarten and elementary school teaching. It provides introduction to unit planning, lesson planning and classroom management. Demonstrations, workshops, and community service learning place special emphasis on the scope and philosophy of art in the elementary curriculum. Prerequisites: junior standing.

### **ARTS 311. Photography 2. 3 Credits.**

This course encourages the refinement of technical skills as well as emphasizing the critical framework in which to place photographic imagery. Assignments will challenge students to think creatively and develop their unique perspective. Reading, research, and discussion introduce students to the major photographic movements that have shaped current theory. Prerequisites: ARTS 211 or permission of the instructor.

### **ARTS 331. Drawing: Composition. 3 Credits.**

Continuation of ARTS 231 with emphasis on composition. Prerequisites: ARTS 231.

### **ARTS 341. Painting: Composition. 3 Credits.**

Introduction to various compositional approaches as specifically applied to painting. Prerequisites: ARTS 241.

### **ARTS 350. Advanced Printmaking. 3 Credits.**

Further investigation of chosen print technique (screenprint, lithography, relief, or intaglio) with special attention to the implementation of color. Prerequisites: ARTS 279 and any introductory printmaking course (ARTS 251, ARTS 252, ARTS 253, or ARTS 254).

### **ARTS 361. Advanced Sculpture. 3 Credits.**

Investigation involves the combination of various materials and construction techniques. Prerequisites: ARTS 261 or permission of the instructor.

**ARTS 363. Intermediate Ceramics. 3 Credits.**

An intermediate course in ceramics with an emphasis on more sophisticated throwing and hand-building techniques toward the development of a personal image. The class includes glaze chemistry, firing procedures, ceramic history and contemporary ceramics. Prerequisites: ARTS 263.

**ARTS 367. Cooperative Education. 1-3 Credits.**

Student participation for credit will be based on the creative relevance of the planned work experience as evaluated and determined by the chair and approved by Career Management. Evaluation and approval must occur prior to the semester in which the work experience will take place. (qualifies as a CAP experience) Prerequisites: approval of the department chair and Career Management.

**ARTS 368. Internship. 1-3 Credits.**

A structured work experience involving aspects of design or craft, filmmaking, video, museum or gallery work, either with or without remuneration. Criteria for evaluation will be determined by work supervisor and cooperating faculty advisor. (qualifies as a CAP experience) Prerequisites: approval by the department chair and Career Management is necessary prior to registration.

**ARTS 369. Practicum. 1-3 Credits.**

A structured research experience, under the supervision of an art department faculty member. A paper evaluating/analyzing the research, a log of research progress, and satisfactory evaluation by the supervising faculty are required. Prerequisites: approval by the department chair.

**ARTS 370. Basic Typography. 3 Credits.**

This course examines the history, terminology and theory of setting text for print and the screen. Students will explore issues of form and meaning, hierarchy, legibility and readability, structure and composition, and the design process. Advanced instruction in software applications for document construction and layout. Prerequisites: ARTS 271.

**ARTS 371. Design Concepts. 3 Credits.**

Open only to students admitted to the graphic design concentration. This advanced course addresses ideation for structured design projects. Students will work individually and collaboratively to develop creative and effective responses to speculative design assignments. (Offered fall) Prerequisites: ARTS 370 and approval for continuance in the graphic design concentration through portfolio review.

**ARTS 372. Design Systems. 3 Credits.**

Open only to students admitted to the graphic design concentration. This course engages students with complex and multifaceted graphic design projects. Projects will address design in series and across multiple formats and media for commercial, promotional, educational, and information contexts. (Offered spring) Prerequisites: ARTS 371.

**ARTS 374. Web Design. 3 Credits.**

This course will introduce the basic understanding of the methods and techniques for designing and developing a website. To design for a user interface platform, the following must be considered: site management/organization, navigation, web page layout, hierarchy of content and content inventory, appropriate uses of type/color/graphics, format, and so on. By taking the necessary steps with process and research, the goal for this course is to design conceptually appropriate websites with valid, easily accessible and dynamic user interface experiences. Prerequisites: ARTS 370 or permission of the instructor.

**ARTS 375. Poster Design. 3 Credits.**

An advanced course devoted to the creation of creative and thought provoking posters. Problem solving is structured to develop conceptual skills and research methodology for the design of posters. The class will utilize analog and digital formats. Pre- or corequisite: ARTS 370.

**ARTS 376. Typographic Design. 3 Credits.**

This course continues the study of typography, image and concept relationships for effective design communication. The student will engage in creative problem solving challenges designed to develop conceptual skills as well as address the issues of research methodology and its application to the creative design process. Advanced typographic problem solving, exploration and experimentation will be examined through the production of complex, multifaceted design projects. Prerequisites: ARTS 372 or permission of the instructor.

**ARTS 377. Extracurricular Studies. 1-6 Credits.**

Extracurricular activities may be approved for credit based on objectives, criteria, and evaluative procedures as formally determined by the department and the student prior to the semester in which the activity is to take place. Such credit is subject to review by the provost. Prerequisites: approval by the department and the dean, in accordance with the policy on granting credit for extracurricular activities.

**ARTS 378. Extracurricular Studies. 1-6 Credits.**

Extracurricular activities may be approved for credit based on objectives, criteria, and evaluative procedures as formally determined by the department and the student prior to the semester in which the activity is to take place. Such credit is subject to review by the provost. Prerequisites: approval by the department and the dean, in accordance with the policy on granting credit for extracurricular activities.

**ARTS 381. Crafts II: Fibers. 3 Credits.**

An introduction to pattern drafting, advanced loom technique, off-loom weaving, and fabric painting. Prerequisites: ARTS 281.

**ARTS 391. Crafts II: Metalsmithing and Jewelry. 3 Credits.**

Additional techniques in casting and soldering with an introduction to basic metal-forming techniques of raising and forging. Prerequisites: ARTS 291.

**ARTS 392. Crafts: Blacksmithing. 3 Credits.**

An introduction to the basic tools, materials and techniques used in forging, forming, hardening and tempering steel. Exploration of form and process in working metal. Prerequisites: junior standing or permission of the instructor.

**ARTS 395. Topics in Studio Art. 3 Credits.**

A study of selected topics designed for non majors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisite: appropriate survey or introductory course or permission of the instructor.

**ARTS 400. Senior Show. 3 Credits.**

Senior requirement for all B.F.A. majors. A study of gallery practices, involving the student with the practical concerns of preparation and presentation: lighting, sequencing, mounting, hanging, and all other necessary activities prior to professional exhibition. The semester culminates with group exhibitions of work by the members of the senior class. Seniors with a graphic design emphasis take ARTS 401. (qualifies as a CAP experience) Prerequisites: Students must be in the final semester of major concentration.

**ARTS 401. Design Portfolio. 3 Credits.**

Open only to students admitted to the graphic design emphasis. This course is intended for students to determine a personal direction in their design practice through the completion of a signature thesis project or the preparation of a portfolio and related work necessary for professional work in a range of design areas. Thesis and portfolio students will present their work to working professionals and experts in the field. The course will also cover career strategies, resume preparation and interviewing skills. (Offered spring) (qualifies as a CAP experience) Prerequisites: ARTS 471. Pre- or corequisite: 6 hours from ARTS 374, ARTS 376, ARTS 395, ARTS 475 or ARTS 495.

**ARTS 406. Secondary Art Education Methods and Classroom Management. 3 Credits.**

This course is designed to prepare pre-service art educators for student teaching by addressing theoretical and practical aspects of lesson and unit planning, curriculum content and design, and various innovative instructional approaches to secondary visual arts education. Corequisite: ARTS 408. Prerequisites: Passing score on PRAXIS I or appropriate SAT score. Pre- or corequisite: ARTS 305, ARTS 407, and TLED 301 or TLED 290.

**ARTS 407. Art Education Practicum. 2 Credits.**

Enables students to interact with a master teacher in the classroom and practice a variety of teaching methods under supervision. Weekly seminars provide opportunities to engage in discourse related to pedagogical issues, theory, practice, and curriculum design found in current literature in art education. (qualifies as a CAP experience) Corequisite: ARTS 408. Prerequisites: Passing score on PRAXIS I or appropriate SAT score. Pre- or corequisite: ARTS 305, ARTS 406 and TLED 301 or TLED 290.

**ARTS 408. Student Teaching Seminar. 1 Credit.**

This is a complement course to Art Education Practicum and must be taken at the same time. Students will create and compile required documents to develop pre-service teacher e-portfolios. Students must take and pass the Virginia Communication and Literacy Assessment (VCLA) and the PRAXIS II Art content knowledge examination prior to or while enrolled in the instructional strategies course. All assessments must be passed prior to the start of the Teacher Candidate Internship Orientation. Corequisite: ARTS 406. Prerequisites: Passing score on PRAXIS I or appropriate SAT score. Pre- or corequisite: ARTS 305, ARTS 407, and TLED 301 or TLED 290.

**ARTS 411. Photography 3. 3 Credits.**

The course focuses on the photographic series examining reportage and contemporary narrative. Students will work on developing a fully conceived photographic series on a theme developed through guided individual research. Reading and discussion will provide students a critical framework in which to place their photographic imagery. Prerequisites: ARTS 211 and ARTS 311.

**ARTS 412/512. Photo Seminar 1. 3 Credits.**

The first of a two-semester sequence of concentrated individual work. Students will identify a topic and create a complete body of work culminating in the senior show. ARTS 400. Lectures, readings, discussion, critique, and field trips to develop the articulation of ideas and the clarification of purpose. Prerequisites: ARTS 211, ARTS 311 and ARTS 411 or permission of the instructor.

**ARTS 413/513. Photo Seminar 2. 3 Credits.**

This is the second in a two-semester sequence of concentrated individual work culminating in the senior show. Through readings, discussion, critiques, field trips, and intense individual work, students will compile a body of work realizing their personal vision and articulate their ideas through the crafting of an artist statement. Prerequisites: ARTS 211, ARTS 311, ARTS 411 and ARTS 412 or permission of the instructor.

**ARTS 431/531. Drawing Studio. 3 Credits.**

Further concentration on conceptual content and drawing skills, development of individual body of work exploring preferred concepts, subject matter, techniques, and media. May be repeated for credit. Prerequisites: ARTS 331.

**ARTS 432/532. Figure Drawing Anatomy. 3 Credits.**

A study of visually important aspects of the structural, skeletal and muscular systems of the body. Anatomical study will be related to drawing from the live model. Prerequisites: ARTS 331 or permission of the instructor.

**ARTS 433/533. Figure Drawing/ Composition. 3 Credits.**

This course places the emphasis on advanced composition using the figure as the central theme. The figure's expressive potential, along with a study of historical responses to figure drawing, will be examined in depth. Prerequisites: ARTS 432/ARTS 532.

**ARTS 441. Advanced Painting: Special Problems. 3 Credits.**

Experimental use of media combined with an exploration of content through creative manipulation of popular themes. Prerequisites: ARTS 341.

**ARTS 442/542. Painting Studio. 3 Credits.**

Independent work in painting with focus on developing content. Frequent critiques. May be taken for repeat credit. Prerequisites: ARTS 441.

**ARTS 450/550. Printmaking Studio. 3 Credits.**

Experimental work in selected print media. Prerequisites: ARTS 350 or permission of the instructor.

**ARTS 455/555. Letterpress Printmaking. 3 Credits.**

A visual and literary investigation of language and wordplay using foundry and wood type and a Vandercook SP-20 proofing press. Projects include expressive printed impressions of personal poetry and song lyric, political rant, and broadsides for entertainment or proselytizing. A theme group project, such as a folio or a bound book, is usually assigned. Prerequisites: ENGL 110C.

**ARTS 461/561. Sculpture Studio. 3 Credits.**

Experimental work reflecting individual initiative and attitude. Prerequisites: ARTS 361 or ARTS 363, and permission of the instructor.

**ARTS 463/563. Advanced Ceramics. 3 Credits.**

An advanced course in the science and art of ceramics. Students will engage in guided independent research, developing their own direction by investigating clay bodies, glazes, firing methods and contemporary ceramic art. Prerequisites: ARTS 263 and ARTS 363.

**ARTS 469/569. Assemblage. 3 Credits.**

Assemblage combines elements of various art and non-art media and materials. Lectures will be comprised of presentations about relevant artists, gallery and studio visits, and critiques. Studio time allows students to explore personal directions in the medium. Prerequisites: junior standing or permission of the instructor.

**ARTS 471. Graphic Design Studio. 3 Credits.**

Open only to students admitted to the graphic design concentration. This course introduces students to the broader opportunities and directions present in contemporary design. Through readings, discussion, and self-directed and self-determined projects, students will explore personal directions and sensibilities in their design practice. (Offered fall) Prerequisites: ARTS 372.

**ARTS 473/573. The Book. 3 Credits.**

The book as a work of art. Lecture will explore historical and technical aspects of book design and production. Studio work will be devoted to the production of a series of books involving page design, paper selection, printing and binding. Prerequisites: ARTS 202, ARTS 279, ARTS 304, and junior standing or permission of the instructor.

**ARTS 475/575. Editorial Design. 3 Credits.**

An examination of conceptual and design strategies associated with the layout of multi-page publication. Emphasis is placed on organizational and hierarchical systems, continuity and pacing, and the integration of image and type. Prerequisites: ARTS 371 or permission of the instructor.

**ARTS 476. Editorial Design. 3 Credits.**

An examination of conceptual and design strategies associated with the layout of multi-page publications. Emphasis is placed on organizational and hierarchical systems, continuity and pacing, and the integration of image and type. Prerequisite: ARTS 371 or permission of instructor.

**ARTS 481/581. Crafts III: Fibers. 3 Credits.**

Advanced work in pattern drafting, loom techniques, off-loom weaving and fabric painting. Prerequisites: ARTS 381.

**ARTS 491/591. Crafts III: Metalsmithing and Jewelry. 3 Credits.**

Further exploration in casting and soldering with concentration in the metal-forming techniques of raising and forging. Additional introduction to the techniques of working in steel. Prerequisites: ARTS 391.

**ARTS 492. Wood Studio/Furniture Design. 3 Credits.**

An exploration of concepts and techniques in wood sculpture and furniture design and fabrication. Prerequisites: ARTS 203.

**ARTS 495/595. Topics in Studio Art. 3 Credits.**

The advanced study of selected topics designed to permit small groups of qualified students to work on studio projects of mutual interest. Prerequisites: permission of the instructor.

**ARTS 497/597. Tutorial Work in Special Studio Topics. 3 Credits.**

Independent investigation of a subject to be selected under the advisement of the instructor. Conferences, papers, field trips, portfolios, or exhibitions as appropriate. Prerequisites: senior standing and permission of the chief departmental advisor.

**ARTS 498. Tutorial Work in Special Studio Topics. 3 Credits.**

Independent investigation of a subject to be selected under the advisement of the instructor. Conferences, papers, field trips, portfolios, or exhibitions as appropriate. Prerequisites: senior standing and permission of the chief departmental advisor.

## ASIA - Asian Studies

### ASIAN STUDIES Courses

**ASIA 332. South Asia Since Independence. 3 Credits.**

This is a comparative study of the main political, economic and social developments in the major countries of South Asia. Themes will include democratization, problems of economic development, the role of caste and religion, the causes of intrastate conflict and interstate conflict and the influence of global forces on the region. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H.

**ASIA 336. The Emergence of New China. 3 Credits.**

The history of China covering late Imperial China, the impact of Western imperialism, the Republican Period, and the establishment of the People's Republic. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H.

**ASIA 337. Japan's Era of Transformation. 3 Credits.**

The history of Japan since 1800. The decline of the Tokugawa Shogunate, modern national building in the Meiji period, domestic conflicts and war in the twentieth century, and the roots of Japan's economic prominence today. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H.

**ASIA 338W. Politics of East Asia. 3 Credits.**

This course is designed for intermediate students who are interested in the theoretical and systematic study of world politics. The course first introduces students to several major theoretical approaches to the study of world politics and then applies these approaches to a number of major, contemporary issues--ranging from war and peace, conflict and cooperation, development and underdevelopment to global and national interests. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, six hours in human behavior, and junior standing or permission of the instructor.

**ASIA 353. Asian Religions. 3 Credits.**

A study of religious and philosophical traditions of India, China and Japan. Primary emphasis will be given to Hinduism, Buddhism, Confucianism and Taoism. Prerequisites: Junior standing and three semester hours in philosophy, or permission of the instructor.

**ASIA 360. Asian Art. 3 Credits.**

An introduction to the architecture, sculpture, calligraphy, pottery, ink, painting, miniature painting, and gardens of India, China, and Japan. Emphasis will be placed on the connections among the cultures: Buddhism and pilgrimage, the importance of the scholar painters, the role of trade routes and the emergence of native writing. Prerequisites: A grade of C or higher in ENGL 110C; a grade of C or higher in ENGL 211C or ENGL 221C or ENGL 231C; ARTH 121A or ARTH 211 or ARTH 212 or permission of instructor.

**ASIA 395. Topics in Asian Studies. 3 Credits.**

A study of selected topics designed for nonmajors or for elective credit within a major. These courses will appear in the course schedule and will be more fully described in information distributed to academic advisors. Prerequisites: HIST 101H or permission of the instructor.

**ASIA 435. Chinese Politics. 3 Credits.**

A study of origins of the Chinese revolution; development and functions of the Chinese Communist Party; government institutions; the defense establishment; evolution of foreign policy; and post-Mao political and economic reforms. Prerequisites: POLS 100S or POLS 102S or permission of the instructor.

**ASIA 460. Major Issues in Asia. 3 Credits.**

The course examines the most salient social, economic, environmental, and political issues in Asia from multidisciplinary and interdisciplinary perspectives. The course focuses on three major geographic areas of Asia--East Asia, South Asia, and Southeast Asia. Prerequisites: Three hours in human behavior and junior standing or permission of the instructor.

**ASIA 461W. Asian Studies Capstone Seminar. 3 Credits.**

As a required course for the Asian Studies major, the course helps students synthesize the knowledge they have learned from the undergraduate courses, write a capstone research paper and present the paper in class. (This is a writing intensive course.) Prerequisites: HIST 101H, a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, and junior standing.

**ASIA 495/595. Topics in Asian Studies. 3 Credits.**

This course is designed for small groups of qualified students to conduct advanced study of selected topics on Asian Studies, topics which may not be taught in regularly scheduled classes. The description of the course for each offering will appear in the course schedule booklet that is distributed to each advisor. Prerequisites: Appropriate survey source or permission of the instructor.

## BIOL - Biological Sciences

### BIOLOGICAL SCIENCES Courses

**BIOL 103. Basic Bacteriology. 4 Credits.**

A course designed to acquaint the student with the elementary principles of bacteriology and other disease causing microorganisms. Emphasis is placed on microorganisms as etiological agents in disease, on practical methods of disinfection, and on the factors of infection and immunity.

**BIOL 105N. Biology for Nonscience Majors I. 4 Credits.**

An introductory biology course for nonbiology majors. This course concentrates on major biological concepts concerning molecular biology, cellular biology, cellular reproduction, classical and molecular genetics, energetics, and ecology. This course would be beneficial to those students who are pursuing elementary education degrees because the course teaches biological topics included in the Virginia Standards of Learning. Cannot be substituted for BIOL 121N and BIOL 122N or BIOL 123N and BIOL 124N.

**BIOL 106N. Biology for Nonscience Majors II. 4 Credits.**

An introductory biology course for nonbiology majors. This course concentrates on plants and animals at the organismal level by examining major biological concepts involving diversity, ecology, behavior, and evolution. This course would be beneficial to those students who are pursuing elementary education degrees because it teaches biological topics included in the Virginia Standards of Learning. Cannot be substituted for BIOL 121N and 122N or for BIOL 123N and BIOL 124N.

**BIOL 110N. Environmental Sciences. 3 Credits.**

An introductory, non-sequential course for nonbiology majors focusing on scientific inquiry and the fundamental biological underpinnings of environmental science. The course concentrates on ecology, evolution, the nature of and threats to biodiversity, and conservation solutions. Cannot be substituted for BIOL 121N or BIOL 123N. BIOL 110N + BIOL 111N satisfy four credits of the University's Nature of Science general education requirement. Corequisite: BIOL 111N.

**BIOL 111N. Environmental Sciences Lab. 1 Credit.**

Laboratory activities and scientific experiments that enhance understanding of environmental science through a hands-on approach that cannot be provided in the lecture classroom setting. BIOL 110N + BIOL 111N satisfy four credits of the University's Nature of Science general education requirement. Cannot be substituted for BIOL 122N or BIOL 124N. Pre- or corequisite: BIOL 110N.

**BIOL 112N. Environment and Man. 3 Credits.**

An introductory, non-sequential course for nonbiology majors focusing on the most serious environmental problems our society is facing today and how these problems can be solved. The course concentrates on the science behind natural resources and resource management, toxicology, environmental policies and ethics, and sustainable living. Cannot be substituted for BIOL 121N or BIOL 123N. BIOL 112N and BIOL 113N satisfy four credits of the University's Nature of Science general education requirement. Pre- or corequisite: BIOL 113N.

**BIOL 113N. Environment and Man Laboratory. 1 Credit.**

Laboratory activities and experiments that enhance understanding of the scientific method and environmental sciences through a hands-on approach that cannot be provided in the lecture classroom setting. This course cannot be substituted for BIOL 122N or BIOL 124N. BIOL 112N + BIOL 113N satisfy four credits of the University's Nature of Science general education requirement. Pre- or corequisite: BIOL 112N.

**BIOL 117N. Introduction to Human Biology. 3 Credits.**

An introductory lecture course for non-majors focusing on scientific inquiry and the structure and function of the human body with units on diet, nutrition, exercise, infectious disease, and cancer. Cannot be substituted for BIOL 121N or BIOL 123N.

**BIOL 118N. Introduction to Human Biology Lab. 1 Credit.**

An introductory lab course for non-majors focusing on scientific inquiry and the structure and function of the human body with units on diet, nutrition, exercise, infectious disease, and cancer. Cannot be substituted for BIOL 122N or BIOL 124N.

**BIOL 121N. General Biology I. 3 Credits.**

An introduction to the process of science, biological molecules, cell biology, metabolism, molecular biology, and Mendelian genetics. A student receiving credit for BIOL 121N or BIOL 123N cannot receive credit for BIOL 110N or BIOL 117N, respectively. Prerequisite: Placement into ENGL 110C and qualifying Math SAT/ACT score, or qualifying score on the Math placement test, or completion of MATH 102M or higher.

**BIOL 122N. General Biology I Lab. 1 Credit.**

A lab course emphasizing the process of science, biological molecules, cell biology, metabolism, molecular biology, and Mendelian genetics. Prerequisite: Placement into ENGL 110C and qualifying Math SAT/ACT score, or qualifying score on the Math placement test, or completion of MATH 102M or higher.

**BIOL 123N. General Biology II. 3 Credits.**

An introduction to the process of science, evolutionary biology, ecology, and the basic biology of viruses, prokaryotes, and eukaryotes. A student receiving credit for BIOL 121N or BIOL 123N cannot receive credit for BIOL 110N or BIOL 117N, respectively. Prerequisite: Placement into ENGL 110C and qualifying Math SAT/ACT score, or qualifying score on the Math placement test, or completion of MATH 102M or higher, and BIOL 121N.

**BIOL 124N. General Biology II Lab. 1 Credit.**

A lab course emphasizing the process of science, evolutionary biology, ecology, and the basic biology of viruses, prokaryotes, and eukaryotes. A student receiving credit for BIOL 122N or BIOL 124N cannot receive credit for BIOL 111N or BIOL 118N, respectively. Prerequisite: Placement into ENGL 110C and qualifying Math SAT/ACT score, or qualifying score on the Math placement test, or completion of MATH 102M or higher, and BIOL 121N.

**BIOL 136N. Honors General Biology I. 3 Credits.**

This course is available only to students in the Honors College. An introduction to the process of science, biological molecules, cell biology, metabolism, molecular biology, and Mendelian genetics. A student receiving credit for BIOL 136N or BIOL 138N cannot receive credit for BIOL 110N or BIOL 117N, respectively. Prerequisites: Placement into ENGL 110C and qualifying Math SAT/ACT score, or qualifying score on the Math placement test, or completion of MATH 102M or higher, and enrollment in the Honors College.

**BIOL 137N. Honors General Biology I Lab. 1 Credit.**

This lab course is available only to students in the Honors College. This lab course emphasizes the process of science, biological molecules, cell biology, metabolism, molecular biology, and Mendelian genetics. A student receiving credit for BIOL 137N or BIOL 139N cannot receive credit for BIOL 111N or BIOL 118N, respectively. Prerequisites: Placement into ENGL 110C and qualifying Math SAT/ACT score, or qualifying score on the Math placement test, or completion of MATH 102M or higher, and enrollment in the Honors College.

**BIOL 138N. Honors General Biology II. 3 Credits.**

This course is available only to students in the Honors College. An introduction to the process of science, evolutionary biology, ecology, and the basic biology of viruses, prokaryotes, and eukaryotes. A student receiving credit for BIOL 136N or BIOL 138N cannot receive credit for BIOL 110N or BIOL 117N, respectively. Prerequisite: Placement into ENGL 110C and qualifying Math SAT/ACT score, or qualifying score on the Math placement test, or completion of MATH 102M or higher, enrollment in the Honors College, and BIOL 136N.

**BIOL 139N. Honors General Biology II Lab. 1 Credit.**

This lab course is available only to students in the Honors College. This lab course emphasizes the process of science, evolutionary biology, ecology, and the basic biology of viruses, prokaryotes, and eukaryotes. A student receiving credit for BIOL 137N or BIOL 139N cannot receive credit for BIOL 111N or BIOL 118N, respectively. Prerequisite: Placement into ENGL 110C and qualifying Math SAT/ACT score, or qualifying score on the Math placement test, or completion of MATH 102M or higher, enrollment in the Honors College, and BIOL 136N.

**BIOL 195. Biology Lab Topics. 1-3 Credits.**

Laboratory topics.

**BIOL 196. Topics. 1-3 Credits.**

Topics in Biology.

**BIOL 250. Human Anatomy and Physiology I. 4 Credits.**

This course emphasizes the gross anatomical relationships and the molecular, cellular, physiological, and metabolic process of the integument, musculoskeletal, neural, and immune systems. Only one semester from BIOL 250-BIOL 251 (4 credits) may count toward upper-division elective requirements.

**BIOL 251. Human Anatomy and Physiology II. 4 Credits.**

This course emphasizes the physiology and pathophysiology of the cardiac, pulmonary, renal, endocrine, and reproductive systems. Only one semester of BIOL 250-BIOL 251 (4 credits) may count toward upper-division elective requirements for the Biology major. Prerequisites: BIOL 250.

**BIOL 291. Ecology. 3 Credits.**

An introduction to the basic concepts of ecology for both biology majors and nonmajors. The concepts are introduced with respect to terrestrial, aquatic, and marine environments. Prerequisites: BIOL 121N, BIOL 122N, BIOL 123N, and BIOL 124N must be passed with a grade of C or higher.

**BIOL 292. Evolution. 3 Credits.**

An introduction to the basic concepts of evolution for both biology majors and nonmajors. The concepts are introduced with respect to terrestrial, aquatic, and marine environments. Prerequisites: BIOL 121N, BIOL 122N, BIOL 123N, and BIOL 124N must be passed with a grade of C or higher.

**BIOL 293. Cell Biology. 3 Credits.**

A comprehensive course in the structural and functional features of cells, including prokaryotic and eukaryotic cells. The course will also examine biomacromolecules, techniques in cell and molecular biology, and current frontiers in cell biology research. Prerequisites: BIOL 115N and BIOL 116N. Pre- or corequisite: MATH 162M and CHEM 211.

**BIOL 303. Genetics. 3 Credits.**

An introduction to the principles of biological inheritance and variation and the molecular basis of gene structure and function. Prerequisites: BIOL 115N, BIOL 116N and STAT 130M. Pre- or corequisites: MATH 162M and CHEM 211.

**BIOL 307. Invertebrate Zoology. 4 Credits.**

An examination of the invertebrate phyla with emphasis on classification, morphology, phylogeny, and general biology. Prerequisites: BIOL 292 must be passed with a grade of C or higher.

**BIOL 308. Botany. 4 Credits.**

A general introduction to the structure, function, ecology, and diversity of plants. Prerequisites: BIOL 291 and BIOL 292 must be passed with a grade of C or higher.

**BIOL 314. Developmental Biology. 5 Credits.**

An analysis of development in animals. Lectures will explore experimental approaches to the study of gametogenesis, fertilization, cleavage and morphogenesis. Laboratory emphasizes the morphological features of the developing vertebrate embryo. Prerequisites: BIOL 250 and BIOL 251 must be passed with a grade of C or higher. Pre- or corequisite: CHEM 211.

**BIOL 315. General Microbiology. 5 Credits.**

Designed to be a general survey of the nature and diversity of microorganisms (especially the bacteria but also including viruses and fungi), the roles and functions of the microorganisms, and basic microbiological research. Laboratories emphasize fundamental techniques in culturing, studying and identifying microorganisms. Prerequisites: BIOL 293 and BIOL 303 must be passed with a grade of C or higher.

**BIOL 322. Ethnobotany. 3 Credits.**

A survey of plants used for food, fiber, medicine, dyes, perfumes, oils, and waxes. The role of plants in folklore and religion is included. A student research project with a written paper and presentation is required. Prerequisites: BIOL 292 AND BIOL 308 must be passed with a grade of C or higher.

**BIOL 331. Marine Biology. 3 Credits.**

A survey of the variety, ecology and adaptations of marine organisms. The course is designed to broadly introduce students to life in the oceans and the many special features of marine species that have evolved in the earth's oldest and most extensive ecosystem. Prerequisites: BIOL 121N, BIOL 122N, BIOL 123N, BIOL 124N, and BIOL 291 must be passed with a grade of C or higher.

**BIOL 334. Field Ethnobotany. 4 Credits.**

Identification, ecology, and uses of native plants and mushrooms. Most classes are field trips. Prerequisites: BIOL 121N, BIOL 122N, BIOL 123N, and BIOL 124N.

**BIOL 335. Ecology Laboratory. 2 Credits.**

A field and laboratory course that emphasizes techniques employed in ecological investigations. Prerequisites: BIOL 291 must be passed with a grade of C or higher.

**BIOL 340. Field Botany. 4 Credits.**

A survey of plants and plant communities of the Mid-Atlantic Coastal Plain. Skills in plant and mushroom identification, specimen preparation, and research databases are emphasized. Most classes are field trips. Prerequisites: BIOL 115N, BIOL 116N, and BIOL 291.

**BIOL 346. Plant Geography. 3 Credits.**

The distribution and characteristics of major plant community types in North America are discussed. Abundant pictures are used to illustrate the flora and plant communities. Prerequisites: BIOL 121N, BIOL 122N, BIOL 123N, and BIOL 124N must be passed with a grade of C or higher.

**BIOL 350. Phage Discovery and Genomics I. 3 Credits.**

This course is the first semester of a two-semester laboratory and scientific writing course designed to provide a unique undergraduate research experience. The first semester course focuses on the discovery of viruses (also known as bacteriophage or phage) that infect bacteria with an emphasis on laboratory techniques. Students will collect phage from environmental samples and learn the laboratory techniques required for the isolation, purification and propagation of viruses. Students will further characterize phage based on microscopy, molecular microbiology techniques, and nucleic acid sequencing. This course emphasizes independent research and additional time outside of the laboratory will be required for sample collection and analysis. This course also is designed to complement the MonarchTeach curriculum. Prerequisites: BIOL 293 and BIOL 303 and permission of the instructor.

**BIOL 367. Cooperative Education. 1-3 Credits.**

Student participation for credit in a paid work environment based on the academic relevance of the work experience as determined by the department and the Cooperative Education program, prior to the semester in which the work experience is to take place. Unstructured course. Students must identify a full-time biology faculty member with the expertise to determine if the cooperative education experience is appropriate for a biology curriculum, approve the learning contract, review the submitted assignments (student report and supervisor's evaluation) and assign a P/F grade. (Qualifies as a CAP experience.) Prerequisites: approval by the department chair and Cooperative Education/Career Management.

**BIOL 368. Internship. 1-3 Credits.**

Supervised participation in non-research professional setting. Requires a minimum of 3 hours per week or equivalent for 1 credit, completion of work report and other documents relevant to the work experience, and supervisor evaluation. Unstructured course. Students must identify a full-time biology faculty member with the expertise to determine if the internship is appropriate for a biology curriculum, approve the learning contract, review the submitted assignments (student report and supervisor's evaluation) and assign a P/F grade. (Qualifies as a CAP experience.) Prerequisites: BIOL 121N, BIOL 122N, BIOL 123N, and BIOL 124N must be passed with a grade of C or higher, junior standing, and the approval of a full-time biology faculty member.

**BIOL 369. Practicum. 1-3 Credits.**

A supervised experience in a research, teaching, or a work/field setting and culminating in the preparation of a written document relevant to the practicum experience. Unstructured course. Students must identify a full-time biology faculty member with the expertise to determine if the practicum is appropriate for a biology curriculum, approve the learning contract, review the submitted assignments (student report and supervisor's evaluation) and assign a P/F grade. (Qualifies as a CAP experience.) Prerequisites: BIOL 121N, BIOL 122N, BIOL 123N, and BIOL 124N must be passed with a grade of C or higher, acceptance as a declared major, junior class status, and approval by the sponsoring full-time biology faculty member and the practicum coordinator.

**BIOL 395. Topics. 1-3 Credits.**

A structured specialty course designed to meet the needs of students in biology. Students are expected to perform at the level of other junior level classes. Prerequisites: BIOL 121N, BIOL 122N, BIOL 123N, and BIOL 124N must be passed with a grade of C or higher.

**BIOL 400/500. Flowering Plant Families. 5 Credits.**

An evolutionary survey of vascular plant families; emphasis on recognition and identification of plant families and the principles and methodologies that define them. A field intensive hands-on course. Prerequisites: BIOL 292 and BIOL 308 with a C or better.

**BIOL 401/501. Entomology. 4 Credits.**

A comprehensive survey of the insects, including taxonomy, morphology, physiology, reproductive and developmental biology, and ecology. Research techniques in entomology will be learned through both field and laboratory work. Prerequisites: BIOL 291 and BIOL 292 must be passed with a grade of C or higher.

**BIOL 403/503. Medical Microbiology. 3 Credits.**

This course integrates the disciplines of microbiology, immunology, and biochemistry with the pathophysiology of infections and the appropriate pharmacology in a problem-based learning setting. Students will learn the fundamental concepts and terminologies of infectious diseases. The material will be case studies in small group tutorials and emphasize independent learning. Prerequisites: BIOL 121N and BIOL 122N, BIOL 123N and BIOL 124N, BIOL 250, BIOL 315, and CHEM 441 must be passed with a grade of C or higher or instructor approval.

**BIOL 404/504. Conservation Biology. 5 Credits.**

The application of fundamental biological principles to the preservation of biodiversity, including the role of ecological and evolutionary theory to the preservation of biotas on a regional and global basis. Lectures will cover modern approaches to conservation biology, including conservation ethics and management issues. Laboratories will include discussion of case studies, introduction to software applicable to conservation biology, presentations by regional conservation practitioners, and visits to relevant field sites. Prerequisites: BIOL 291 must be passed with a grade of C or higher and junior standing or permission of instructor.

**BIOL 405W. Biology Seminar. 3 Credits.**

This course offers a capstone experience in scientific writing, faculty-mentored library research, the review and synthesis of material from the primary technical literature, and oral presentation. Students will develop a deeper understanding of the purposes and types of scientific writing, the structure and interpretation of technical papers, and the oral and written communication skills appropriate to the discipline. (This is a writing intensive course.) Prerequisites: BIOL 291, BIOL 292, BIOL 293, and BIOL 303 and two 300- or 400-level elective courses, a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, and CS 120G or CS 121G or CS 126G or HLTH 120G or IT 150G or STEM 251G.

**BIOL 408/508. Introduction to Pharmacology. 4 Credits.**

This is a general introductory course in pharmacology dealing with chemistry, general properties and pharmacological effects on various physiological systems, therapeutic usefulness and toxicities of drugs. The course is designed to prepare upper-level undergraduate and graduate students for more advanced courses in pharmacology. Prerequisites: BIOL 250, BIOL 293, and BIOL 303 must be passed with a grade of C or higher or permission of the instructor.

**BIOL 409/509. Immunology. 3 Credits.**

A comprehensive study of the phenomena of immune resistance, the cells and tissues involved in immune responses, and the consequences of immunization. Prerequisites: BIOL 293 and BIOL 303 must be passed with a grade of C or higher or permission of the instructor.

**BIOL 412/512. Plant Physiology. 4 Credits.**

A study of the physiological processes occurring in plants. A laboratory and greenhouse oriented course stressing plant nutrients, cell metabolism-respiration, photosynthesis, nitrogen metabolism, and plant hormones. Prerequisites: BIOL 292 must be passed with a grade of C or higher. Pre- or corequisite: BIOL 293 and CHEM 211.

**BIOL 415/515. Marine Ecology. 3 Credits.**

An introduction to ecological processes in the marine environment with an emphasis on coastal ecosystems. The course covers synthetic topics as well as the ecology of specific marine habitats. Prerequisites: BIOL 291 and BIOL 331 must be passed with a grade of C or higher. Pre- or corequisite: When offered during the fall semester, BIOL 442 is a corequisite.

**BIOL 416/516. Clinical Immunology. 3 Credits.**

A description of common immunological problems seen in the clinic. Prerequisites: BIOL 409 must be passed with a grade of C or higher.

**BIOL 419/519. Wetland Plants. 5 Credits.**

A field-oriented course emphasizing the identification and ecology of aquatic and wetland plants with emphasis on plants used to delineate wetlands following federal guidelines. Activities include the use of identification databases, apps, and traditional floras and monographs. A research project including a written paper and presentation is required. Prerequisites: BIOL 291 and BIOL 308 must be passed with a grade of C or higher.

**BIOL 420/520. Ichthyology. 5 Credits.**

The biology of marine and freshwater fishes including morphology, physiology, evolution, distribution, ecology, and reproduction. Prerequisites: BIOL 292 must be passed with a grade of C or higher and junior standing.

**BIOL 422/522. Field Studies in Ornithology. 4 Credits.**

A combined lecture and field study of birds with emphasis on identification, behavior, and field methods. Extensive field trips, including at least one weekend, are taken. Prerequisites: BIOL 291 and BIOL 292 must be passed with a grade of C or higher or permission of the instructor.

**BIOL 423/523. Cellular and Molecular Biology. 3 Credits.**

The molecular organization of eukaryotic cells is presented along with cell evolution, molecular genetics, the internal organization of the cell and the behavior of cells in multicellular organisms. Prerequisites: BIOL 293 and BIOL 303.

**BIOL 424/524. Comparative Animal Physiology. 5 Credits.**

An introduction to the basic mechanisms by which different animals function. How organisms acquire and use energy, regulate their internal environment, circulate and exchange gases and wastes, receive and conduct information about their environment, and move and use muscles will be some of the topics covered. Emphasis will be on how organisms make changes in these basic mechanisms to deal with different environmental conditions. Prerequisites: BIOL 292 must be passed with a grade of C or higher.

**BIOL 425/525. Cancer Biology. 3 Credits.**

This course will examine how mutation leads to altered gene products and expression, subverted cell activity, cell immortalization, and tumor formation. Students will explore the differences between benign tumors and malignant tumors as well as the factors involved in malignancy. The course will conclude with the exploration of current cancer therapy. Prerequisites: BIOL 293 and BIOL 303 must be passed with a grade of C or higher.

**BIOL 426/526. Histology. 5 Credits.**

The structure and function of cells, tissues and organs at both the light microscopic and ultrastructural levels. Prerequisites: BIOL 250 and BIOL 293 must be passed with a grade of C or higher.

**BIOL 430/530. Microbial Pathogenesis. 3 Credits.**

Examination of bacterium-host interactions with an emphasis on how bacteria cause disease, particularly the means by which the bacterium is able to circumvent host defense mechanisms. Prerequisite: BIOL 315.

**BIOL 435/535. Marine Conservation Biology. 3 Credits.**

This highly interdisciplinary science of conserving marine biodiversity will be taught through a review of old and new literature. This will include its history, marine ecology related to conservation biology, threats to marine biodiversity, assessment of extinction risk, conservation challenges of marine habitats and regions, and methods for conserving marine biodiversity. Prerequisites: BIOL 331 must be passed with a grade of C or higher.

**BIOL 436W/536. Infectious Disease Epidemiology. 3 Credits.**

This lecture/lab course will focus on concepts related to the spread and control of infectious diseases. The lectures will focus on concepts while the labs will provide quantitative skills essential to the study of infectious diseases. This course is also a writing-intensive course. Prerequisites: BIOL 291, and BIOL 292, and BIOL 293, and BIOL 303, and MATH 200 or MATH 163 or MATH 211, and STAT 130M or STAT 310, and ENGL 231C or ENGL 221C or ENGL 211C; all must be passed with a grade of "C" or higher.

**BIOL 438/538. Dendrology. 4 Credits.**

The study of trees and shrubs, their identification, ecology, structure and anatomy, lore, and uses are emphasized in this field-oriented course. A research project including a written paper and presentation is required. Prerequisites: BIOL 308 or its equivalent must be passed with a grade of C or higher.

**BIOL 441/541. Animal Behavior. 5 Credits.**

Animal behavior with special attention to its evolution and ecological significance. Field and laboratory activities will emphasize the observational and experimental techniques used to study behavior. Prerequisites: BIOL 291 and BIOL 292 must be passed with a grade of C or higher and junior standing or permission of the instructor.

**BIOL 442/542. Marine Ecology Laboratory. 2 Credits.**

A laboratory/field course in which students gain practical experience with research techniques common to coastal marine ecology, and become familiar with the organisms and ecological conditions present in the various marine habitats visited by the class. A field trip of several days is required. Pre- or corequisite: When offered during the fall semester, BIOL 415 is a corequisite.

**BIOL 444/544. Field Studies in Marine Biology. 5 Credits.**

An intensive study abroad field course offered during the summer at a foreign marine laboratory where students will be engaged in lectures and field studies of coastal marine environments. Check with the Director of the Marine Biology Concentration Program for details. Prerequisite: BIOL 331 must be passed with a grade of C or higher.

**BIOL 445/545. Community Ecology. 3 Credits.**

The goal of this course is to introduce and evaluate both classical and emerging paradigms in community ecology. This will be achieved by examining those processes (biotic and abiotic) that structure ecological communities and by exposing students to quantitative and theoretical aspects of these paradigms. Prerequisites: BIOL 291 must be passed with a grade of C or higher.

**BIOL 446/546. Comparative Biomechanics. 3 Credits.**

The principles of fluid and solid mechanics will be applied to a variety of plant and animal systems to understand how organisms deal with the immediate physical world and its accompanying constraints. A diverse range of topics will be covered, including aerial flight in insects, wind resistance in trees, jet propulsion in squid, flow within blood vessels, forces on intertidal organisms, viscoelasticity in biological materials, and energy storage during terrestrial movement. Prerequisites: BIOL 293 must be passed with a grade of C or higher; PHYS 111N and PHYS 112N are recommended.

**BIOL 450/550. Principles of Plant Ecology. 4 Credits.**

This course emphasizes the general theoretical concepts in plant ecology with statistical methods. The structure, development, processes, and history of plant communities are studied. Laboratories involve extensive fieldwork. A weekend field trip is required. Prerequisites: BIOL 291 must be passed with a grade of C or higher and senior standing.

**BIOL 453/553. Molecular Ecology. 4 Credits.**

This course will explore the biology of organisms by using molecular (nucleic acid and/or protein) techniques and data. It covers a wide variety of subdisciplines within Biology, including genetics, physiology, ecology, and evolution. This course will explore basic theory in population genetics, ecology, and evolution and cover DNA, RNA, and Protein techniques and their application to biological research. Prerequisites: BIOL 291, BIOL 292, BIOL 293, AND BIOL 303 all must be passed with a grade of C or higher.

**BIOL 456/556. Population Genetics. 3 Credits.**

Prerequisites: BIOL 303. An introduction to the principles of population genetics that addresses topics such as inheritance, genetic variation, fitness, natural selection, mutation, genetic drift, gene expression, and single- and multi-locus models of different types of selection. Human disease is addressed. Students will write a mock-grant proposal. Prerequisite: BIOL 303.

**BIOL 457/557. General Virology. 3 Credits.**

A basic course covering the history of virology, viral taxonomy, genetics, and the molecular biology and host responses to the major mammalian virus groups. Examples of recent impacts of viruses on human health such as influenza pandemics will also be covered. Prerequisites: BIOL 293 and BIOL 303 must be passed with a grade of C or higher.

**BIOL 460/560. Frontiers in Nanoscience and Nanotechnology. 1 Credit.**

Review of the structure, synthesis and properties of key nano-materials and their impact on living systems. Prerequisites: BIOL 293 must be passed with a grade of C or higher.

**BIOL 461/561. Human Cadaver Dissection. 4 Credits.**

Students will dissect a human cadaver and learn all major structures. All exams will be practical tag-tests using human tissue. The major emphasis will be on head, neck, trunk, and joints with some clinical application to injuries and surgery. Prerequisites: BIOL 250 and BIOL 251, or their equivalent, must be passed with a grade of C or higher.

**BIOL 462/562. Microbial Genetics. 3 Credits.**

This course will emphasize the fundamental concepts of microbial genetics including the study of gene structure, gene regulation, operons, DNA replication, RNA biology, protein synthesis, plasmid biology, mobile genetic elements, and recombinant DNA technology. Prerequisites: BIOL 315.

**BIOL 463/563. Cell Signaling in Host Pathogen Interactions. 3 Credits.**

This course will emphasize cell dynamics including host and pathogen induced cellular signaling, the regulation of actin cytoskeleton rearrangement, and the modulation of host transcription and translation by different pathogens. Prerequisite: BIOL 293.

**BIOL 464/564. Biomedical Applications of Low Temperature Plasmas. 3 Credits.**

This course is cross listed between ECE and Biology. It is designed to be taken by senior undergraduate students and first year graduate students. The course contents are multidisciplinary, combining materials from engineering and the biological sciences. The course covers an introduction to the fundamentals of non-equilibrium plasmas, low temperature plasma sources, and cell biology. This is followed by a detailed discussion of the interaction of low temperature plasma with biological cells, both prokaryotes and eukaryotes. Potential applications in medicine such as wound healing, blood coagulation, sterilization, and the killing of various types of cancer cells will be covered. Prerequisites: Senior standing.

**BIOL 474/574. Mushrooms. 4 Credits.**

This field oriented course emphasizes the identification, classification, ecology, culture, and uses of mushrooms and other fleshy fungi. Prerequisites: BIOL 308 must be passed with a grade of C or higher.

**BIOL 478/578. Microbial Ecology. 3 Credits.**

Study of the interactions between microorganisms, particularly bacteria, and their environment. Emphasis is placed on nutrient cycling and the influence of microbes on global mineral dynamics. The effects of physical and chemical factors on the distribution and activity of microbes in their environments and the applications (biotechnology) of these interactions are studied. Prerequisites: BIOL 315 must be passed with a grade of C or higher.

**BIOL 479/579. Microbial Ecology Laboratory. 1 Credit.**

A laboratory for measurement of microbial numbers and activity in natural environments. Pre- or corequisite: BIOL 478.

**BIOL 480/580. Advanced Human Physiology Laboratory. 2 Credits.**

A study of the cardiovascular, respiratory, nervous and digestive systems using mammals. Pre- or corequisite: BIOL 250 and BIOL 251.

**BIOL 481/581. Forensic and Medical Entomology. 5 Credits.**

A comprehensive survey of insects important to legal and medical fields, including their biology, use in criminal investigations and roles as disease vectors. Laboratories will include exercises in both field and bench laboratory activities. Prerequisites: BIOL 291 and BIOL 292 must be passed with a grade of C or higher.

**BIOL 482/582. Human and Veterinary Parasitology. 3 Credits.**

The course will cover principles of parasitism, including biology, physiology, genetics, morphology, and phylogeny of the major parasitic groups. The course will concentrate on significant parasites of humans and animals of veterinary importance, and will discuss general parasite biology including life cycles, diagnosis, and treatment. Prerequisites: BIOL 293 and BIOL 303 or permission of instructor.

**BIOL 487. Honors Research in Biology. 4 Credits.**

Independent study and scheduled meetings with faculty advisor. Supervised independent study in an area of individual interest in biology. The work in this course results in the production of a thesis. (qualifies as a CAP experience) Prerequisites: admission to the Honors Program and senior standing.

**BIOL 488W. Honors Research in Biology. 4 Credits.**

Independent study and scheduled meetings with faculty advisor. Supervised independent study in an area of individual interest in biology. The work in this course results in the production of a thesis. (This is a writing intensive course.) (qualifies as a CAP experience) Prerequisites: BIOL 487, admission to the Honors Program, senior standing, and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**BIOL 490/590. Advanced Human Physiology. 4 Credits.**

All major physiological systems will be examined with an emphasis on normal physiology. Some clinical applications will be discussed. Prerequisites: BIOL 250 and BIOL 251 must be passed with a grade of C or higher.



**BIOL 496/596. Topics. 1-3 Credits.**

A specially designed, structured course concerning specific topics in the biological, environmental, or allied health fields. Prerequisites: BIOL 121N, BIOL 122N, BIOL 123N, and BIOL 124N, junior standing, permission of instructor.

**BIOL 497. Undergraduate Research. 1-3 Credits.**

Prerequisites: BIOL 115N and BIOL 116N, junior standing, permission of instructor, permission of CDA. Student performs lab and/or field research under supervision of ODU faculty or other approved professional. Requires a minimum of 3 hours per week or equivalent for 1 credit, completion of lab/field notes and written report and evaluation by supervisor. May qualify as lab experience (see CDA). (qualifies as a CAP experience).

**BIOL 498/598. Independent Study. 1-3 Credits.**

This unstructured course is based on a supervised project (non-lab/non-field) selected to suit the needs of the individual student. Requires the completion of a formal scientific paper documented with the appropriate primary technical literature. Contact the Chief Departmental Advisor (CDA) for details. Prerequisites: BIOL 121N and BIOL 122N or BIOL 136N and BIOL 137N, BIOL 123N and BIOL 124N or BIOL 138N and BIOL 139N must be passed with a grade of "C" or higher; junior standing, permission of the supervising instructor, and permission of the Chief Departmental Advisor (CDA) are also required.

## BME - Biomedical Engineering

### BIOMEDICAL ENGINEERING Courses

**BME 401/501. Biomedical Engineering I: Principles. 3 Credits.**

The course exposes students to principles used in biomedical engineering. Areas discussed include modeling of physiological processes, biomedical signal acquisition and processing, biomaterials, rehabilitation engineering, and ethical principles in biomedical engineering. Prerequisites: Junior standing.

**BME 402/502. Biomedical Engineering II: Applications. 3 Credits.**

The course is a continuation of BME 401. Students are exposed to modern biomedical engineering applications aligned with the principles and physiological processes covered in the previous course. Selected topics include: prosthetic devices, tissue engineering, neural interfaces, cardiac devices, and imaging techniques. Prerequisite: BME 401.

**BME 405/505. Biomechanics. 3 Credits.**

This course will discuss methods of quantitative analysis of biological forces and materials that produce human movement. Kinematics, force analysis of joints, the measurement of mechanical properties and the development and understanding of models of the biological materials incorporating structure and composition will be emphasized. Prerequisite: permission of the instructor.

**BME 408/508. Microfluidics. 3 Credits.**

This course discusses theory of fluids on the macro-micro-and nano-scales, and devices that use small volumes of fluid for biomedical applications including diagnostics and cellular control. Topics include microscale fluid mechanics, heat and mass transfer, advanced micro/nanotechnology, and methods used in modern fluid dynamics projects. Pre-requisite: Junior standing.

**BME 410/510. Biomedical Instrumentation. 3 Credits.**

This course will expose students to fundamentals of medical instrumentation including biosensors, transducers, biomedical signals, signal processing and electrical safety. Instruments for biomedical measurements of cardiovascular, respiratory, and other vital functions will be fabricated and tested in laboratory exercises. Biomedical applications will be discussed. Prerequisite: junior standing.

**BME 454/554. Introduction to Bioelectrics. 3 Credits.**

This course covers the electrical properties of cells and tissues as well as the use of electrical and magnetic signals and stimuli in the diagnosis and treatment of disease. Typical topics to be covered include basic cell physiology, endogenous electric fields in the body, electrocardiography, cardiac pacing defibrillation, electrotherapy, electroporation, electrotherapy in wound healing. In addition ultra-short electrical pulses for intracellular manipulation and the application of plasmas to biological systems will be covered. Prerequisites: PHYS 111N or higher and MATH 200 or higher.

## BNAL - Business Analytics

### BUSINESS ANALYTICS Courses

**BNAL 206. Probability, Decision Analysis and Business Statistics. 3 Credits.**

An introduction to methods of probability assessment and statistical inference. Topics include descriptive statistics, normal and binomial distributions, decision making under uncertainty and under risk, decision analysis incorporating sample information, sampling distributions and Central Limit Theorem, interval estimation, and hypothesis testing. Business and economic applications are emphasized. Computer software, as a tool for problem solving, is utilized where appropriate. Prerequisites: A grade of C or better in MATH 162M or placement into a higher level math course.

**BNAL 306. Statistical Data Analysis and Management Science. 3 Credits.**

Quantitative methods for solving business problems. Topics include advanced hypothesis testing, analysis of frequency data, correlation analysis, simple and multiple regression, time series forecasting, linear programming formulation and managerial analysis, distribution models, and PERT/CPM models. Computer software, as a tool for problem solving, is utilized throughout the course. Emphasis is on the interpretation of the varied aspects of quantitative solutions. Prerequisites: MATH 200, BNAL 206 and a declared major in the University or permission of the Dean's Office.

**BNAL 367. Cooperative Education. 1-3 Credits.**

Approval for enrollment and allowable credits are determined by the department and Career Management in the semester prior to enrollment. (Qualifies as a CAP experience.) Prerequisites: Junior standing and a declared major in the University or permission of the Dean's Office.

**BNAL 368. Internship. 1-3 Credits.**

Approval for enrollment and allowable credits are determined by the department and Career Management in the semester prior to enrollment. (Qualifies as a CAP experience.) Prerequisites: BNAL 306 and a declared major in the University or permission of the Dean's Office.

**BNAL 369. Practicum. 1-3 Credits.**

Approval for enrollment and allowable credits are determined by the department CAP adviser and the Career Management Center in the semester prior to enrollment. Student participation in a professional work experience. (Qualifies as a CAP experience.) Prerequisites: BNAL 206 and BNAL 306 and a declared major in the University or permission of the Dean's Office.

**BNAL 406. Spreadsheet Modeling and Analysis for Business Decisions. 3 Credits.**

This course introduces students to the use of spreadsheet modeling to analyze and make business decisions. Course topics include spreadsheet design, data analysis for modeling, and Monte Carlo simulation. Students will improve their proficiency in using spreadsheet applications and advanced spreadsheet features through the use of software such as Excel. Prerequisites: A grade of C or better in BNAL 306 and a declared major in the University or permission of the Dean's Office.

**BNAL 407/507. Business Analysis. 3 Credits.**

Formulation and solution of mathematical models and their uses and limitations in business. Topics include linear, integer, and goal programming, network models, queuing, utility theory, and Markov analysis. Cases and computer solution of topics introduced in this class, as well as topics from BNAL 206 and 306, are incorporated. Prerequisites: BNAL 306 and a declared major in the University or permission of the Dean's Office or the instructor.

### **BNAL 415. Advanced Business Analytics/Big Data Applications. 3 Credits.**

This course addresses advanced business analytics techniques and the application of such techniques to large data sets. Some alternative business analytics strategies are introduced. Descriptive, predictive, and prescriptive models are included. Topics covered in this course include data visualization and exploration, cluster analysis, and developing and calibrating predictive models for big data. Applications of multivariate, logistic, and probit regression to business analytics are discussed. Software packages such as SAS/JMP/SPSS may be used. Prerequisites: BNAL 306 and a declared major in the University or permission from the Dean's Office in the CBPA.

### **BNAL 432/532. Forecasting. 3 Credits.**

Techniques for preparing business forecasts. Applications include both shorter term forecasting for sales and operations management as well as forecasting for long term planning. Emphasis is on statistical methods to obtain and evaluate forecasts. Statistical models are implemented using standard software such as MINITAB or EXCEL. Prerequisites: BNAL 306 and a declared major in the University or permission of the Dean's Office.

### **BNAL 441. Supply Chain Management and Logistics. 3 Credits.**

Supply chain management integrates all activities associated with the flow of materials and information from product start to customers. Examples include order processing, warehousing, inventory management, transportation and logistics, and the costs and information systems supporting these activities. Particular application is made to global logistics systems supporting port and maritime activities. Supply chain relationships can be improved through effective integration of management and via such technologies as the World Wide Web, electronic data exchange, and enterprise resource planning (ERP). (Cross-listed with MSCM 441.) Prerequisites: OPMT 303 and a declared major in the University or permission of the Dean's Office in the CBPA.

### **BNAL 476/576. Simulation Modeling and Analysis for Business Systems. 3 Credits.**

Methods and techniques of digital computer simulation of business systems utilizing knowledge of data processing, statistics, probability theory and operations research. Areas of application include systems that experience waiting problems. Topics include the methodology for the construction of computer simulation models, model verification, validation, and analysis of results. This course also includes/qualifies as a CAP experience. Prerequisites: OPMT 303 and BNAL 306 with a grade of C or better, senior standing and a declared major in the University or permission of the Dean's Office.

### **BNAL 495. Topics in Business Analytics. 3 Credits.**

Selected advanced topics in decision sciences. Taught on an occasional basis. See the course schedule for the particular topic being taught each semester. Prerequisites: Senior standing and a declared major in the University or permission of the Dean's Office.

### **BNAL 497. Independent Study. 1-3 Credits.**

Affords students the opportunity to undertake independent study under the direction of a faculty member. Prerequisites: Permission of department.

## **BUSN - Business Administration**

### **BUSINESS ADMINISTRATION Courses**

#### **BUSN 110. Introduction to Contemporary Business. 1 Credit.**

Provides students with a preliminary understanding of business and gives them an opportunity to use office productivity software to enhance communications and presentations. Students should be able to identify career prospects for each of the primary business areas (such as Accounting, Finance, Management, etc.) and basic business terminology. Office productivity software (word processing, spreadsheets, and presentation) will be heavily used by the faculty and students for communication in the form of presentations and essays.

## **CDSE - Communication Disorders and Special Education**

### **COMMUNICATION DISORDERS AND SPECIAL EDUCATION Courses**

#### **CDSE 495/595. Topics in Education. 1-6 Credits.**

Selected topics in education. Prerequisites: junior standing or permission of the instructor.

#### **CDSE 497/597. Independent Study in Special Topics in Education. 1-3 Credits.**

Independent study of selected topics. Prerequisite: junior standing or permission of the instructor.

## **CEE - Civil and Environmental Engineering**

### **CIVIL AND ENVIRONMENTAL ENGINEERING Courses**

#### **CEE 111. Information Literacy and Research. 2 Credits.**

Lecture, 2 hours. 2 credits. Prerequisite: ENGN 110. This course will introduce students to the needs, access, evaluation, use, impact and ethical/legal aspects of information, as well as to the application of information literacy and research in the fields of civil and environmental engineering.

#### **CEE 195. Topics in Civil and Environmental Engineering. 1-3 Credits.**

Lecture 1-3 hours; 1-3 credits. Prerequisite: Permission of the department chair. Special topics in civil and/or environmental engineering at the introductory level.

#### **CEE 204. Statics. 3 Credits.**

Introduction to engineering problems and their solutions through a study of the statics of particles and rigid bodies. Corequisite: PHYS 231N. Prerequisite: MATH 211 with a C or higher.

#### **CEE 220. Mechanics of Deformable Bodies. 3 Credits.**

This course provides fundamental theories to understand the strength of materials focused on civil engineering applications. It will cover stress-strain relationship, equilibrium of deformable bodies and behavior of axially loaded members. It will also analyze for stresses, strains, and deformation of members subjected to torsions in both elastic and inelastic ranges. Other topics, such as buckling and stability of columns, Mohr circle, and energy methods will also be discussed. Pre- or corequisite: CEE 204 with a grade of C or better.

#### **CEE 240. Geographic Information Systems in Civil and Environmental Engineering. 3 Credits.**

Lecture 1 hour; laboratory 4 hours; 3 credits. Prerequisite: MATH 212, sophomore standing or higher. Geographic Information Systems as they apply to civil and environmental engineering. Spatial data acquisition, generation and analysis methods from terrestrial, aerial and satellite sources. Modeling of terrain, land, and hydrographic information using CADD. Use of GIS software in the creation and application of GIS spatial data bases to engineering problems.

#### **CEE 295. Topics in Civil and Environmental Engineering. 1-3 Credits.**

Lecture 1-3 hours; 1-3 credits. Prerequisite: Permission of the department chair. Topics in civil and/or environmental engineering at the basic engineering level.

#### **CEE 304. Probability Statistics and Risk in Civil and Environmental Engineering. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing in CEE. CEE infrastructure systems definitions and methodology. CEE economics basics and use. Probability theory and applications. Statistics parameters, functions, variance, regression, and correlation analysis. Professional practice issues of ethics, licensure, procurement of work, and professional interaction.

**CEE 305. Civil and Environmental Computations. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: junior standing, MATH 307, CS 150. Introduction to selected numerical methods and their specific application to solving problems in many of the areas of civil and environmental engineering. Further development of computer programming proficiency.

**CEE 310. Structures I. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MAE 220 and a grade of C or better in CEE 204. Analysis of statically determinate structures. Influence lines and structural design. Displacement calculations. Introduction to analysis of indeterminate structures.

**CEE 320. Civil Engineering Materials. 3 Credits.**

Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: MAE 220. Properties of steel, portland cement concrete, bituminous concrete, aggregates, and timber.

**CEE 323. Soil Mechanics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MAE 220. Corequisite: CEE 335. Fundamental engineering properties of soil and their application to earth structures and foundations. Topics include seepage, compaction, strength, and deformation characteristics of soils.

**CEE 330. Hydromechanics. 3 Credits.**

Fluid properties, fluid statics and fundamentals of fluid kinematics. Steady, incompressible conservation laws for mass, momentum and energy including real fluid energy losses. Turbulent, incompressible fluid flows in closed conduits and with a free surface. Introduction to thermodynamics. Prerequisites: MATH 212.

**CEE 335. CE Soils and Hydraulics Laboratory. 1 Credit.**

Laboratory 2 hours; 1 credit. Corequisites: CEE 323 and 340. Soils and hydraulics tests, including index testing, compaction, permeability, consolidation, shear tests for soils. Pipe flow, open channel flow, surface hydrology, groundwater, and hydraulic structures for hydraulics.

**CEE 340. Hydraulics and Water Resources. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CEE 330. Corequisite: CEE 335. Analysis of closed-conduit flow and open-channel flow. Principles of surface water hydrology and groundwater hydraulics. Economics and probability concepts in water resources planning.

**CEE 350. Environmental Pollution and Control. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: CHEM 121N-122N, MATH 211, PHYS 231N. Introduction to the fundamental principles of environmental engineering. Topics in water quality, water and wastewater treatment, air quality, and solid waste and landfills are discussed.

**CEE 367. Cooperative Education. 1-3 Credits.**

1-3 credits (may be repeated for credit). Prerequisite: approval by the department and Career Management in accordance with the policy for granting credit for cooperative education programs. Available for pass/fail grading only. Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place. (qualifies as a CAP experience).

**CEE 368. Internship. 1-3 Credits.**

1-3 credits (may be repeated for credit). Prerequisite: approval by department and Career Management. Available for pass/fail grading only. Academic requirements will be established by the department and will vary with the amount of credit desired. Allows students to gain short duration career-related experience. (qualifies as a CAP experience).

**CEE 369. Practicum. 1-3 Credits.**

1-3 credits (may be repeated for credit). Prerequisite: approval by department and Career Management. Available for pass/fail grading only. Academic requirements will be established by the department and will vary with the amount of credit desired. Allows students to gain short duration career-related experience. (qualifies as a CAP experience).

**CEE 395. Topics. 1-3 Credits.****CEE 402. Professional Practice of Engineering. 1 Credit.**

Lecture 1 hour, 1 credit. Prerequisite: Senior standing. The course will cover the practice and business aspects of engineering including concepts in management, business, public policy, and leadership. It will also cover public and private procurement of work, project management and execution, responsibility to clients, contracting, project finances, professional liability, and public safety.

**CEE 403W. Civil Engineering Design Project and Professional Practice. 3 Credits.**

3 credits. For graduating seniors only. Prerequisite: grade of C or better in ENGL 211C or 221C or 231C. Group design project of civil engineering systems requiring synthesis, data gathering, preliminary investigation, master planning, conceptual designs, layouts, support studies, cost estimates and report writing. Emphasis will be on alternatives, constraints, economics, ethics and professional practice, business and project management, public policy and leadership. (This is a writing intensive course.)

**CEE 410. Concrete Design I. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CEE 310. Fundamental concepts of reinforced concrete analysis and design by ultimate strength and working stress methods.

**CEE 411/511. Concrete Design II. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CEE 410 or equivalent. Analysis and design of complex concrete structural members, flat and two-way slabs, special topics and introduction to prestressed concrete design.

**CEE 414/514. Masonry Structures Design. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CEE 310. Masonry materials, reinforced beams and lintels, walls, columns and pilasters, shear walls, and buildings.

**CEE 415/515. Steel Structures Design. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CEE 310. Load and resistance factor design methods for steel structures.

**CEE 416/516. Wood Structures Design. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CEE 310. Design of wood structures based on national design specification and load and resistance factor design.

**CEE 430/530. Foundation Engineering. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CEE 323. Subsurface exploration, site preparation, design of shallow and deep foundations, and retaining structures.

**CEE 431/531. Earth Structures Design with Geosynthetics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CEE 323. Seepage and stability analysis and design of manmade and natural slopes and retaining structures. Applications of geosynthetic material to seepage control, reinforcement of earth works, and containment of hazardous materials.

**CEE 432/532. Introduction to Earthquake Engineering. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: senior standing and permission of the instructor. An overview of earthquake processes and details of the characteristics of destructive ground motion; the effects of such motion on civil engineering structures; reviews of current design practice in mitigating earthquake hazards for various civil engineering structures such as buildings, bridges, dams, lifelines, ports and harbors, etc.

**CEE 440/540. Hydraulic Engineering. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CEE 340. Hydraulic transients; flow control structures; computer analysis of hydraulic systems; design of pipelines, open channels and culverts.

**CEE 446/546. Urban Stormwater Hydrology. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CEE 340. Storm rainfall analysis, design rainfall hyetographs, runoff calculation procedures, detention basins, use of mathematical models to analyze and design urban storm drainage systems.

**CEE 447/547. Groundwater Hydraulics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CEE 340. Description of well hydraulics in single and multiple well systems. Determination of aquifer parameters from pumping tests. Use of computer models to determine drawdowns due to multiple well systems.

**CEE 450/550. Water Distribution and Wastewater Collection System Design. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CEE 330. Corequisite: CEE 340. Design of water distribution systems, sanitary sewer systems and appurtenances.

**CEE 451. Water and Wastewater Treatment. 3 Credits.**

Discussion of water quality constituents and introduction to the design and operation of water and wastewater treatment facilities. Prerequisites: CEE 330, CEE 350.

**CEE 452/552. Air Quality. 3 Credits.**

Study of air quality management standards and regulations and pollutant dynamics. Design and operation of emission control equipment for mobile and stationary sources of air pollution. Prerequisite: CEE 350.

**CEE 454/554. Hazardous Wastes. 3 Credits.**

Study of sources, generation rates and characteristics of hazardous wastes and their regulation, handling, and design of treatment and disposal facilities. Prerequisite: CEE 350.

**CEE 458/558. Sustainable Development. 3 Credits.**

Overview of social, economical, technical environmental aspects of regional, national and international efforts to achieve sustainable development. Discussion of the integration of industrial activity and ecological concerns utilizing principles of zero emissions, pollution prevention and design for the environment. Prerequisite: junior standing or permission of instructor. (WEB Based, On-Line Course).

**CEE 459/559. Biofuels Engineering. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. Course covers the overview of renewable energy sources; fundamentals of biofuels; biomass and types of biomass (e.g., woody biomass, forest residues, agricultural residues, energy crops); composition of lignocelluloses (cellulose, hemicellulose, and lignin); biomass conversion technologies; thermochemical, supercritical water, and biochemical conversion processes; types of biofuels from biomass; liquid fuels (bioethanol, bio-oil, biocrude, and hydrocarbons); gaseous fuels (synthesis gas, hydrogen, biodiesel); solid fuels (biochar, torrefied biomass); biodiesel from vegetable oils, algae to biofuels; value-added processing of biofuel residues; economic and environmental assessments; policies and future R&D.

**CEE 460/560. Advanced Analytical Techniques in Environmental Engineering. 3 Credits.**

The objective of this class is to introduce students to the analytical, experimental, and process engineering techniques that are utilized to support decision making in environmental engineering. Prerequisite: CEE 350.

**CEE 470/570. Transportation Fundamentals. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: senior standing. This course surveys the current practice of transportation engineering in the United States. It focuses on various ground transportation modes and covers policy, institutional, planning and operational issues. Students are introduced to planning models, capacity analysis, traffic impact analysis, and parking studies.

**CEE 471/571. Transportation Operations I. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CEE 470. This is the first course in transportation operations and traffic flow theory. Topics include traffic engineering studies, capacity analysis, intersection control, traffic flow models, shockwave analysis, signal warrant analysis, and safety analysis. Course includes applications of modeling and simulation to isolated intersections.

**CEE 476/576. Transportation Operations Applications. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CEE 470. This course deals with operations applications in transportation. It covers theory and practical examples of traffic engineering studies, capacity analysis, intersection control, signal warrant analysis, and safety analysis. Topics discussed also include traffic management, access management, traffic calming, and regional operations management.

**CEE 482/582. Introduction to Coastal Engineering. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: CEE 330 and permission of the instructor. Classical small amplitude wave theory, wave transformations in shallow water, shoaling, refraction, diffraction, reflection, breaking. Wave induced near shore currents and sediment transport processes. Alternatives to mitigate coastal erosion processes. Introduction to coastal structures.

**CEE 495/595. Topics in Civil and Environmental Engineering. 1-3 Credits.**

Lecture 1-3 hours; 1-3 credits. Prerequisite: Permission of the department chair. Special topics of interest with emphasis placed on recent developments in civil and/or environmental engineering.

**CEE 497. Independent Study in Civil and Environmental Engineering. 1-3 Credits.**

Individual analytical, experimental and/or design study selected by the student and supervised by the advisor. Prerequisites: approval of the advisor.

## CET - Civil Engineering Technology

### CIVIL ENGINEERING TECHNOLOGY Courses

**CET 120. Civil 2D Computerized Aided Drafting. 3 Credits.**

This course is computer based drafting, where methods are taught with a major emphasis on practical application using two-dimensional AutoCAD software in the computer lab. This includes the basic principles of Civil Engineer drawings to include but not limited to: dimensioning and tolerances, spot elevations, contours, plan and profile view, section views, details, scaling, measurements. It will introduce students to site plan drawings, mechanical view, structural views, architectural views, roadway plan and profiles, as well as buried infrastructure plan and profiles. Finally, it will be the basis for preparation of a working set of plans, for use in all follow-on CET courses.

**CET 200. Statics. 3 Credits.**

Scalar methods and free body diagrams are employed in the analysis of discrete and distributed force systems and their application to bodies in external equilibrium. Friction, moment of inertia, and center of gravity are also included. Pre- or corequisite: MATH 211.

**CET 205. Principles of Surveying. 3 Credits.**

Basic plane surveying measurements and computations, survey control systems, elementary digital mapping and simple curves, and building construction survey and stakeout. Field exercises using standard surveying instrumentation, traverse and leveling techniques, topographic mapping and curve layout. Prerequisites: MATH 163 and MET 120.

**CET 210. Fundamentals of Building Construction. 3 Credits.**

Introduction to various materials and methods available for design and construction of buildings. Covers application and combination of traditional materials and methods, and recent innovations in construction systems. Prerequisites: sophomore standing or permission of the instructor.

**CET 220. Strength of Materials. 3 Credits.**

Mechanical behavior of materials subjected to various external loads. Stress-strain relationships are utilized to design members subjected to shear, axial, bending, and torsional loads. Deformations are predicted and Mohr's circle is introduced. Prerequisites: MATH 211 and CET 200.

**CET 295. Topics. 1-3 Credits.**

Study of selected topics.

**CET 296. Topics. 1-3 Credits.**

Study of selected topics.

**CET 301. Structural Analysis. 3 Credits.**

Determination of forces, moments, and deflections in statically determinate and indeterminate beams, frames, and trusses due to various load cases and load combinations. Methods of analysis will include matrix stiffness analysis, moment distribution and other approximate and computer methods. Prerequisite: CET 220.

**CET 314. Boundary Law. 3 Credits.**

Laws, evidence and procedures in boundary surveying. Topics include written, unwritten and riparian rights, easements, interpretation of written and field boundary evidence, subdivisions, and preparation of boundary descriptions and plans. Boundary project management and professional practice are emphasized throughout the course. Prerequisites: CET 205.

**CET 319. Surveying for Engineers. 1 Credit.**

Special topics in surveying for civil engineering students and professional engineers. Not open to civil engineering technology majors. Prerequisite: MATH 163.

**CET 330. Fluid Mechanics. 3 Credits.**

Elementary mechanics of fluids. Fluid properties; hydrostatics; fluid kinematics; equations of motion; energy equation; momentum principles; flow of liquids and gasses in closed conduits; flow in open channels and/or compressible flow. Use of spreadsheets is required. Prerequisite: CET 220.

**CET 332. Water Resources Engineering. 3 Credits.**

Hydrologic and hydraulic principles are utilized in the planning, design, operation and construction of water management projects. The course addresses fundamental hydrology, including precipitation and runoff and basic hydraulics including open channel flow, pipe networks and pumps. Prerequisites: CET 330.

**CET 340. Soils and Foundations. 3 Credits.**

A study of the engineering properties of soil including stress, shear strength, and bearing capacity. Movement of water through soils, consolidation and settlement of structures and the design of shallow and deep foundations are also covered. Prerequisite: CET 220.

**CET 341W. Soils Testing Laboratory. 2 Credits.**

Course includes standard methods for inspecting, sampling, testing, and evaluating soils. Students use typical test equipment and perform tests on samples of local soils. A written report is required for each experiment. (This is a writing intensive course.) Prerequisite: CET 220; grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**CET 345W. Materials Testing Laboratory. 2 Credits.**

Standard methods of inspecting and testing structural materials used in construction are followed. A written report is required for each experiment. (This is a writing intensive course.) Prerequisites: grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C. Pre- or corequisite: CET 220.

**CET 355. Sustainable Building Practices. 3 Credits.**

The course will examine industry trends in sustainable building practices. It explores the green building strategies used in the design and construction of sustainable buildings. The role of site selection, water efficiency, energy, materials and resources, and indoor environmental quality will be explored. Prerequisites: Junior standing.

**CET 360. Plans and Specifications. 3 Credits.**

A detailed study of the form and content of typical plans and specification documents used in the construction industry. The use of computer-aided drafting in assembling a set of plans and specifications. Prerequisites: CET 210 and MET 120 or CET 120.

**CET 367. Cooperative Education. 1-3 Credits.**

Available for pass/fail grading only. Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place. (offered fall, spring, summer) (qualifies as a CAP experience) Prerequisites: approval by the department and Career Management in accordance with the policy for granting credit for Cooperative Education programs.

**CET 368. Internship. 1-3 Credits.**

Available for pass/fail grading only. Academic requirements will be established by the department and will vary with the amount of credit desired. Allows students to gain short duration career-related experience. (qualifies as a CAP experience) Prerequisites: approval by department and Career Management.

**CET 369. Practicum. 1-3 Credits.**

Available for pass/fail grading only. (qualifies as a CAP experience) Prerequisites: approval by department and Career Management.

**CET 395. Topics. 1-3 Credits.**

Topics in Civil Engineering Technology. Prerequisites: permission of the instructor.

**CET 396. Topics. 1-3 Credits.**

Topics in Civil Engineering Technology. Prerequisites: permission of the instructor.

**CET 400. Computer Applications in Structural Design. 3 Credits.**

Use and application of commercial software for analysis and design of building and non-building type structures. Determination of compliance with strength, serviceability, and fabrication requirements. Introduction to computer modeling in 2D and 3D, pre and post processors, interpretation of results and development of professionally written reports. Prerequisites: CET 301.

**CET 405. Environmental Loads. 3 Credits.**

Familiarize the student with the analysis of environmental design loads required for the design of building and non-building type structures in the United States. A thorough study of loading categories and load combinations for ASD and LRFD is also covered. Extensive use of the International Building Code (IBC) and the Minimum Design Loads for Building and Other Structures (ASCE 7) is expected. Prerequisites: CET 220.

**CET 408. Hydraulic Engineering. 3 Credits.**

Analysis of hydraulics problems associated with the design of civil engineering structures. Uniform, steady flow in open channels; hydraulic models; design problems for dams; spillways and hydraulic structures; hydraulic machinery and other related topics will be discussed. Use of spreadsheets is required. Prerequisites: CET 330. Pre- or corequisite: MET 335W.

**CET 410. Reinforced Concrete Design. 3 Credits.**

Structural analysis and design of reinforced concrete members. Topics include flexural analysis and design of structures, including slabs, beams and columns using strength design procedures. Prerequisite: CET 301.

**CET 415. Design of Structural Systems. 3 Credits.**

This course focuses on assembly design as opposed to member design as learned in structural design courses. The students are able to work on the overall stability of structures using one or more building materials such as concrete, wood, steel, cold-formed steel, and/or masonry. The use of building codes, standards and specifications is required. The main objective of this class is to adequately prepare the student for the senior design project. The course also offers an introduction to low-rise building design. Prerequisites: CET 450 or CET 410 or CET 452. Pre- or corequisite: CET 400.

**CET 420. Hydrology and Drainage. 3 Credits.**

Hydrologic and hydraulic principles are utilized in the planning, design, operation and construction of water management projects. Topics include elements of stormwater drainage pertaining to hydrology, hydraulics of open channel and pipe flow, stormwater management, and issues pertinent to state stormwater regulations and the Chesapeake Bay Preservation Act. The course also covers water distribution and sewage collection systems. Prerequisites: senior standing.

**CET 425. Land Design and Development. 3 Credits.**

Applications of fundamental site engineering principles, land design principles and permitting issues. A brief historical review of exemplary subdivision, NewTown, and urban designs and their impact on current practice. Site surveying and engineering issues including hydrology, storm water management, site geometry, grading, design of roads, engineering design standards and computer applications in site engineering are examined. The principles of siting and theories of design for esthetic and efficient alignment of roads, layout of structures and subdivision parcels are introduced. Prerequisites: CET 340 and CET 420.

**CET 434. Introduction to Senior Project. 1 Credit.**

This course must be taken in the semester prior to the Senior Project course. A collection of career-related topics pertaining to engineering technology. Topics include engineering codes and standards, engineering ethics, technical report writing, job search and resume writing techniques, patents and property rights, and professional engineering licensure. The course concludes with the selection of the student's project topic for the subsequent Senior Project course. Prerequisites: senior standing.

**CET 440. Contract Documents. 3 Credits.**

The basic concepts of contracts and the standard contract documents used in construction. Also included is a study of the dispute resolution process in arbitration. Prerequisites: CET 210.

**CET 445. Construction Planning and Scheduling. 3 Credits.**

The basic elements of planning and scheduling building construction projects. All elements of building construction, including the precedence methods of scheduling. Use of computers and planning and scheduling software are emphasized. Prerequisites: CET 210.

**CET 450. Structural Steel Design. 3 Credits.**

Structural analysis and design of steel structures, including beams, girders, columns, composite sections, trusses, rigid frames and connections using the LRFD method. Analysis of statically-determinate cantilever (hungspan) systems also are covered. Prerequisite: CET 301.

**CET 452. Wood Design. 3 Credits.**

Analysis and design of wooden structural elements of buildings to satisfy design codes. Included are shearwall design and connections as well as beams, columns and other elements. Prerequisite: CET 301.

**CET 460. Construction Cost Estimating. 3 Credits.**

Evaluation and analysis of the basic elements of estimating construction costs for buildings. Elements of take off and pricing for Division 1 through Division 6 are covered. Use of computers and estimating software are emphasized. Prerequisites: CET 210.

**CET 465. Construction Project Management. 3 Credits.**

An introduction to the procedures and methods that are used by a contractor during the construction phase of a project. Special emphasis on planning, managing and documenting project activities. Topics include job site layout and control, subcontracting and purchasing and changes and claims/progress payments. Prerequisite: CET 210.

**CET 470. Infrastructure, Heavy Highway and Equipment. 3 Credits.**

Methods and resources used to construct traditional civil infrastructure systems. Equipment utilization. Prerequisites: CET 205 and CET 210.

**CET 475. Senior Design Project. 3 Credits.**

Students in the structural design emphasis area must also have CET 360. Independent or group design projects in the various CET emphasis areas with instructor and/or mentor guidance. Projects should include development and design, leading to appropriate engineering documents, with written and oral reports. (qualifies as a CAP experience) Prerequisites: CET 434, final semester or permission of the instructor.

**CET 495. Topics. 1-3 Credits.**

Topics in civil engineering technology. Prerequisites: permission of the instructor.

**CET 496. Topics. 1-3 Credits.**

Topics in civil engineering technology. Prerequisites: permission of the instructor.

## CHEM - Chemistry and Biochemistry

### CHEMISTRY AND BIOCHEMISTRY Courses

**CHEM 103. Introductory Chemistry. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: knowledge of basic algebra. An introductory course designed to acquaint the student with the basic principles of chemistry.

**CHEM 105N. Introductory Chemistry. 3 Credits.**

Lecture 3 hours, 3 credits. Prerequisite: knowledge of basic algebra. Corequisite: CHEM 106N. This course is the first part of a two-semester sequence of chemistry covering topics in general, organic, and biological chemistry. In this part, an introduction to the principles of inorganic (general) chemistry is provided. The topics to be covered include measurements, atoms and elements, compounds and their bonds, energy and matter, gases, solutions, acids and bases, chemical reactions and quantities, chemical equilibrium, and nuclear chemistry. This course does not meet the prerequisite for CHEM 123N, and cannot be used toward the CHEM major or minor. Students wishing to pursue advanced study in chemistry should take CHEM 121N, 122N, 123N, and 124N. Credit for CHEM 105N is not allowed if a student has prior credit for CHEM 121N. CHEM 105N + CHEM 106N satisfy four credits of the University's Nature of Science general education requirement.

**CHEM 106N. Introductory Chemistry Laboratory. 1 Credit.**

Laboratory 2 hours; 1 credit. Co- or prerequisite: CHEM 105N. An introduction to common laboratory techniques and the process of science is provided. CHEM 105N + CHEM 106N satisfy four credits of the University's Nature of Science general education requirement.

**CHEM 107N. Introductory Organic and Biochemistry. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CHEM 105N with a grade of C or better. Corequisite: CHEM 108N. This course is the second part of a two-semester sequence of chemistry covering topics in general, organic, and biological chemistry. In this part, an introduction to organic compounds and their role in biological systems is provided. The topics to be covered include the structure, nomenclature, and reactivity of organic compounds, the structure and function of important biomolecules, and the chemistry of metabolic pathways. This course does not meet the prerequisite for CHEM 211, and cannot be used toward the CHEM major or minor. Students wishing to pursue advanced study in chemistry should take CHEM 121N, 122N, 123N, and 124N. CHEM 107N + CHEM 108N satisfy four credits of the University's Nature of Science general education requirement.

**CHEM 108N. Introductory Organic and Biochemistry Laboratory. 1 Credit.**

Laboratory 2 hours; 1 credit. Prerequisite: CHEM 106N with a grade of C or better. Corequisite or prerequisite: CHEM 107N. Laboratory experiments involving organic compounds and biomolecules are performed. CHEM 107N + CHEM 108N satisfy four credits of the University's Nature of Science general education requirement.

**CHEM 121N. Foundations of Chemistry I Lecture. 3 Credits.**

This is the first of a two-course series, designed for science and engineering majors, that prepares the student for subsequent studies in molecular science and constitutes the foundation for all upper-level chemistry courses. Topics include the descriptive chemistry of selected elements, modern atomic and molecular structure, stoichiometry, thermochemistry, and gas laws. A student receiving credit for CHEM 121N cannot receive additional credit for CHEM 103 or CHEM 105N or CHEM 135N. CHEM 121N + CHEM 122N satisfy 4 credits of the University's Nature of Science general education requirement. Co-requisite or prerequisite: CHEM 122N. Prerequisite: MATH 102M or MATH 103M or higher with a grade of C or better. High School chemistry or CHEM 103 is strongly recommended.

**CHEM 122N. Foundations of Chemistry I Laboratory. 1 Credit.**

Laboratory 2 hours; Recitation 1 hour; 1 credit. Corequisite or prerequisite: CHEM 121N. Laboratory experiments are designed to complement the topics presented in the companion lecture course, CHEM 121N. A student receiving credit for CHEM 122N cannot receive additional credit for CHEM 106N. CHEM 121N + CHEM 122N satisfy 4 credits of the University's Nature of Science general education requirement.

**CHEM 123N. Foundations of Chemistry II Lecture. 3 Credits.**

Lecture 3 hours, Recitation, 1 hour. 3 credits. Corequisite or prerequisite: CHEM 124N. Prerequisite: CHEM 121N with a grade of C or better. This is the second of a two-course series, designed for science majors, that prepares the student for subsequent studies in molecular science and constitutes the foundation for all upper-level chemistry courses. Topics include states of matter, solutions, electrochemistry, thermodynamics, equilibria, and kinetics. CHEM 123N + CHEM 124N satisfy 4 credits of the University's Nature of Science general education requirement.

**CHEM 124N. Foundations of Chemistry II Laboratory. 1 Credit.**

Laboratory 2 hours; 1 credit. Corequisite or prerequisite: CHEM 123N. Prerequisites: CHEM 121N and CHEM 122N with grades of C or better. Laboratory experiments are designed to complement the topics in the companion lecture course, CHEM 123N. CHEM 123N + CHEM 124N satisfy 4 credits of the University's Nature of Science general education requirement.

**CHEM 137N. Advanced General Chemistry I and II Lecture. 4 Credits.**

Lecture 3 hours; recitation 1 hour; 4 credits. Pre- or corequisite: MATH 162M. This lecture, along with CHEM 138N, will fulfill all requirements for a complete year of general chemistry. This combination will satisfy all general chemistry prerequisites for upper level chemistry courses.

**CHEM 138N. Advanced General Chemistry I and II Laboratory. 4 Credits.**

Laboratory 6 hours; 4 credits. Prerequisite: CHEM 137N. This laboratory course is intended for students who have completed CHEM 137N. Experiments cover foundational topics and skills in chemistry and introduce students to chemical research.

**CHEM 195. Selected Topics. 1-3 Credits.**

1-3 credits. Prerequisite: permission of the chief departmental advisor or chair of the department. Selected laboratory or lecture topics designed for students who need to supplement a transfer course to fulfill a course requirement.

**CHEM 211. Organic Chemistry Lecture. 3 Credits.**

Chemistry of carbon compounds with in-depth treatments of reaction mechanisms, modern spectral techniques, and new synthetic methods. Prerequisites: CHEM 123N or CHEM 137N with a grade of C or better.

**CHEM 212. Organic Chemistry Laboratory. 2 Credits.**

Laboratory 4 hours; 2 credits each semester. Pre- or corequisites: CHEM 211 with a grade of C or better. Prerequisites: CHEM 124N or CHEM 138N with a grade of C or better. Experience is offered in synthetic, separation, and analytical methods of organic chemistry. Modern synthetic and spectroscopic techniques are introduced.

**CHEM 213. Organic Chemistry Lecture. 3 Credits.**

Lecture 3 hours; 3 credits each semester. Prerequisite: CHEM 211 with a grade of C or better. Chemistry of carbon compounds with in-depth treatments of reaction mechanisms, modern spectral techniques, and new synthetic methods to meet the needs of chemistry and biochemistry majors.

**CHEM 214. Organic Chemistry Laboratory. 2 Credits.**

Experience is offered in synthetic, separation, and analytical methods of organic chemistry. Modern synthetic and spectroscopic techniques are introduced. Prerequisites: CHEM 212 with a grade of C or better. Pre- or corequisite: CHEM 213 with a grade of C or better.

**CHEM 321. Analytical Chemistry Lecture. 3 Credits.**

A study of the fundamental principles of quantitative chemical analysis including the application of principles of equilibria to analytical processes. Emphasis is given to gravimetric and titrimetric methods as well as consideration of electrical, optical, and other methods of chemical analysis. Prerequisites: CHEM 123N or CHEM 137N/138N and MATH 211 with a grade of C or better.

**CHEM 322. Analytical Chemistry Laboratory. 2 Credits.**

Laboratory 4 hours; 2 credits each semester. Prerequisite: CHEM 124N or CHEM 138N with a grade of C or better. Pre- or corequisite: CHEM 321 or permission of the instructor. Statistical principles or measurements and error analysis are integrated with experiments designed to evaluate and refine techniques of fundamental measurements to a level of analytical competency. These techniques are applied to the analysis of samples using gravimetric, titrimetric, electrical and optical methods.

**CHEM 331. Physical Chemistry Lecture I. 3 Credits.**

Quantum chemistry, molecular structure, and spectroscopy. Prerequisites: CHEM 321, CHEM 213 and PHYS 231N-PHYS 232N with a grade of C or better. Pre- or corequisite: MATH 312 with a grade of C or better.

**CHEM 332W. Experimental Physical Chemistry I. 2 Credits.**

Laboratory 4 hours; 2 credits each semester. Prerequisite: grade of C or better in ENGL 211C or 221C or 231C. Pre- or corequisite: CHEM 331 with a grade of C or better. Physical chemical techniques are applied to studies on thermodynamics, solution phenomena, gases, electrochemistry, chemical kinetics, and spectroscopy. Statistical analysis of data. (This is a writing intensive course.).

**CHEM 333. Physical Chemistry Lecture II. 3 Credits.**

Chemical thermodynamics of pure substances and solutions, chemical equilibrium, electrochemistry, chemical kinetics, and statistical thermodynamics. Prerequisites: CHEM 331 with a grade of C or better.

**CHEM 334W. Experimental Physical Chemistry II. 2 Credits.**

Laboratory 4 hours; 2 credits each semester. Prerequisite: grade of C or better in ENGL 211C or 221C or 231C. Pre- or corequisite: CHEM 332W and 333 with a grade of C or better. Physical chemical techniques are applied to studies on thermodynamics, solution phenomena, gases, electrochemistry, chemical kinetics, and spectroscopy. Statistical analysis of data. (This is a writing intensive course.).

**CHEM 351. Inorganic Chemistry. 3 Credits.**

This foundational course provides an introduction to inorganic chemistry. Topics include periodic law, bonding theory, oxidation/reduction, acid/base theory, descriptive chemistry of the main group, and an introduction to transition metal coordination chemistry. Prerequisites: Grade of C or better in CHEM 137N or CHEM 123N.

**CHEM 352. Inorganic Chemistry Laboratory. 2 Credits.**

Laboratory 4 hours, 2 credits. Co- or prerequisite: CHEM 351 with a grade of C or better. Synthesis of metal and nonmetal inorganic compounds and organometallic compounds, their characterization by physical methods, and a study of their properties.

**CHEM 365. Undergraduate Teaching Experience. 1-3 Credits.**

Teaching experience in a chemistry classroom or laboratory setting under the direct supervision of the course instructor. Prerequisite: junior standing and/or approval of the appropriate departmental coordinator. Available for Pass/Fail grading only.

**CHEM 367. Cooperative Education. 1-3 Credits.**

1-3 credits (may be repeated for credit). Prerequisite: approval by the department and Cooperative Education/Career Management in accordance with the policy for granting credit for Cooperative Education programs. Student participation for credit is based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and the Cooperative Education program prior to the semester in which the work experience is to take place. Available for pass/fail grading only. (qualifies as a CAP experience).

**CHEM 369. Chemistry Practicum. 1-3 Credits.**

A student may choose a coop, internship, research, or student teaching experience to gain out-of-class experience related to the major. Prerequisite: CHEM 331/332W (Chemistry major) or CHEM 441/442 (Biochemistry major) and the approval of the appropriate departmental coordinator. (qualifies as a CAP experience).

**CHEM 415/515. Intermediate Organic Chemistry. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CHEM 211-213 with a grade of C or better. An in-depth treatment of the chemistry of carbon compounds, including reaction mechanisms, spectral techniques, polymerization, pericyclic reactions, and biomolecules.

**CHEM 421/521. Instrumental Analysis Lecture. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CHEM 331 with a grade of C or better. Designed to be taken concurrently with CHEM 422/522. A study of the basic principles of spectroscopic, chromatographic, and electrochemical methods of quantitative chemical analysis. Methods of chemical instrumentation are also included.

**CHEM 422/522. Instrumental Analysis Laboratory. 3 Credits.**

Laboratory 6 hours; 3 credits. Prerequisite: CHEM 332W with a grade of C or better. Pre- or co-requisite: CHEM 421/521 with a grade of C or better. An intensive laboratory study of the principles of analytical chemistry. Experiments in spectroscopic, chromatographic, and electrochemical methods are conducted to illustrate fundamental principles and to provide the opportunity to develop skills in the use of instrumentation for chemical measurement.

**CHEM 441/541. Biochemistry Lecture. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CHEM 213 with a grade of C or better. This course is a one-semester survey of the major molecular constituents, bioenergetics, enzymes, nucleic acid structure, and genetic information transfer pathways fundamental to biochemistry.

**CHEM 442W/542. Biochemistry Laboratory. 4 Credits.**

Lecture 1 hour; laboratory 6 hours; 4 credits. Pre- or corequisite: CHEM 441/541 with a grade of C or better. Prerequisite: CHEM 214 with a grade of C or better and ENGL 211C or 221C or 231C with a grade of C or better. Principles and techniques of biochemical and immunological procedures involving protein characterization and isolation, enzymology, bioinformatics, and common molecular biology techniques for nucleic acids will be presented. (This is a writing intensive course.)

**CHEM 443/543. Intermediate Biochemistry. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CHEM 441/541 with a grade of C or better or equivalent. This course presents an in-depth study of protein structure, folding, and synthesis. The major metabolic pathways will be studied in detail regarding thermodynamics and mechanism of regulation or control of individual enzymes and entire metabolic pathways. Concepts of metabolic disease will be introduced and effects on integrated metabolism will be presented.

**CHEM 449. Environmental Chemistry. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: CHEM 123N or CHEM 137N, CHEM 213 and CHEM 321 with a grade of C or higher or permission of the instructor. An overview of the natural chemical systems operating in Earth's atmosphere, hydrosphere (natural waters), and terrestrial environment, and the effects that human activities may have on them. Specific topics to be discussed include: origin and evolution of Earth and life, chemistry of the atmosphere (including the ozone layer and greenhouse effect), organic and inorganic components of soil and water, the hydrologic cycle, chemical weathering, chemical speciation and complexation, and microbial processes in soil and water.

**CHEM 451/551. Advanced Inorganic Chemistry. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CHEM 333 with a grade of C or better. Theoretical aspects of modern inorganic chemistry: bonding theories, stereochemistry, acid-base theories, coordination compounds, organometallic and bioinorganic compounds.

**CHEM 452/552. Advanced Inorganic Chemistry Laboratory. 2 Credits.**

Laboratory 4 hours; 2 credits. Prerequisite: CHEM 351 and CHEM 352. Synthesis of metal and nonmetal inorganic compounds and organometallic compounds, their characterization by modern physical methods, and a study of their properties.

**CHEM 453/553. Essentials of Toxicology. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CHEM 213 with a grade of C or higher. Fundamental principles of toxicology: dose-response relationship, toxicologic testing, chemical and biological factors influencing toxicity, organ toxicology, carcinogenesis, mutagenesis, teratogenesis.

**CHEM 460/560. Frontiers in Nanoscience and Nanotechnology. 1 Credit.**

Lecture 1 hour; 1 credit. Prerequisite: junior standing. Nanotechnology presents unparalleled opportunities for advances in technology and medicine. Simultaneously, nanotechnology presents new challenges to organisms and to our environment. These undefined risk factors threaten to slow the development of new technologies and novel medical therapies. This course will review: structure, synthesis and properties of key nanomaterials; key applications of nanomaterials in technology and medicine; and impacts of nanomaterials on plant and animal physiology and the environment more generally. This course will be team-taught by faculty members in Biological Sciences, Chemistry and Biochemistry, and Engineering.

**CHEM 485. Chemistry and Biochemistry Seminar. 1 Credit.**

1 credit. Prerequisite: CHEM 331 and Senior standing. The formal presentation of a chemical or biochemical topic before students and faculty. Students will also take Major Field Test during this course.

**CHEM 490. Senior Thesis I. 1 Credit.**

Laboratory, 2 hours; 1 credit. Prerequisite: Chemistry or Biochemistry major; Senior standing; Cumulative GPA of 3.20 or higher. Part one of a two-semester thesis project involving literature research, development of scientific writing skills, and obtaining lab experience using a variety of techniques and equipment. Each student will undertake a research experience under the supervision of a departmental faculty member. A preliminary report of research findings is required at the end of the semester.

**CHEM 495. Selected Topics. 1-3 Credits.**

1-3 credits. Prerequisite: permission of the instructor.

**CHEM 497. Independent Study. 1 Credit.**

An opportunity is afforded students to undertake independent study or an original investigation under the direction of a faculty member. Prerequisites: course background appropriate to the proposed study project and approval of the department chair and the faculty/research advisor.

**CHEM 498. Independent Study. 2 Credits.**

An opportunity is afforded students to undertake independent study or an original investigation under the direction of a faculty member. Prerequisites: course background appropriate to the proposed study project and approval of the department chair and the faculty/research advisor.

**CHEM 499. Senior Thesis II. 2 Credits.**

Continuation of CHEM 490. The research culminates in a thesis that includes a literature review, description of methods, results and conclusions, and an oral presentation. Prerequisite: CHEM 490 and a cumulative GPA of 3.20 or better.

## CHIN - Chinese

### CHINESE Courses

**CHIN 111F. Beginning Chinese. 6 Credits.**

Aural comprehension, oral drill and discussion of grammar principles, written exercises, and reading assignments.

**CHIN 212. Intermediate Chinese. 6 Credits.**

This course continues to focus on the fundamental elements of the Chinese language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Prerequisites: CHIN 111F.

**CHIN 295. Topics in Chinese. 1-3 Credits.**

Study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest. Prerequisites: Junior standing or permission of instructor.

**CHIN 311. Advanced Chinese Language and Culture I. 3 Credits.**

This course takes students to an advanced level of communicative competence and language social interaction. The course includes more complex sentence patterns and Chinese cultural activities. Prerequisites: CHIN 212.



**CHIN 312. Advanced Chinese Language and Culture II. 3 Credits.**

This course takes students to a higher level of communicative competence and language social interaction. The course gradually introduces more formal speech and written-style language within cultural contexts. Prerequisites: CHIN 311.

**CHIN 395. Topics in Chinese. 1-3 Credits.**

A study of selected topics for elective credit. These courses will appear in the course schedule booklet and will be more fully described in a booklet distributed to academic advisors. Prerequisites: Junior standing or permission of the instructor.

**CHIN 396. Topics in Chinese. 1-3 Credits.**

A study of selected topics for elective credit. These courses will appear in the course schedule booklet and will be more fully described in a booklet distributed to academic advisors. Prerequisites: Junior standing or permission of the instructor.

**CHIN 495. Topics in Chinese. 3 Credits.**

The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. This course will appear in the course schedule booklet, and will be more fully described in a booklet distributed to academic advisors. Prerequisites: Senior standing or permission of the instructor.

## CHP - Community Health Professions

### COMMUNITY HEALTH PROFESSIONS Courses

**CHP 200. Principles of Public Health. 3 Credits.**

Overview of the principles and practices of public health in the world. What is public health? What are its origins, evolution, and how is it structured and administered globally? A discussion of the mission, concepts, principles and practices of population-based public health will predominate. Topics will include global health and environmental health.

**CHP 201. Public Health in the United States after 9/11. 3 Credits.**

This course will focus on the changing practices of protecting the public's health in the United States. Topics include biosecurity, bioterrorism, food safety, disease surveillance, and the new threats of biological, chemical and physical hazards.

**CHP 318. Principles of Nutrition. 3 Credits.**

Course designed especially for those entering the health education or health care field, covering the physiology of each of the major body systems as a basis for understanding those aspects of its function that reflect the importance of various nutrients. Prerequisites: CHEM 105N-106N and CHEM 107N-108N or CHEM 121N-122N and 123N-124N; BIOL 250 or 251 or permission of the instructor.

**CHP 328. Public Health Science. 3 Credits.**

This course is designed to expand knowledge of the core functions of public health: biostatistics, environmental sciences, epidemiology, health policy and management sciences, and social and behavioral sciences. Prerequisite: CHP 200.

**CHP 335. Population Health. 3 Credits.**

This course provides a population-based approach to professional work in disease management, chronic care management and politics, in addition to students studying public health, health policy, quality and patient safety, health care administration, medicine, nursing, pharmacy, social work and other related clinical professions. Prerequisite: CHP 200.

**CHP 360. Introduction to Global Health. 3 Credits.**

This course introduces students to health-care delivery systems of nonWestern countries, specifically developing countries. The various factors that influence health-care planning and delivery of health services are addressed. Prerequisite: CHP 200.

**CHP 368. Internship. 1-3 Credits.**

This course will allow a BSHS student to complete an internship for gaining basic job entry skills or to enhance a job skill. Prerequisites: CHP 200, 360, 450, and 465; ENVH 301W, 448; and DNTH 415.

**CHP 369. Practicum in Health Sciences. 1-3 Credits.**

1-3 credits. Prerequisites: junior standing and approval of the Health Sciences Advisor and the Career Management Center. This is a 1-3 credit course intended for the student in the College of Health Sciences seeking a CAP experience. (qualifies as a CAP experience).

**CHP 390. The U.S. Healthcare Delivery System. 3 Credits.**

The uniqueness of the U.S. healthcare delivery system will be explored in terms of a systems framework and its complexity. The basic characteristics that differentiate the U.S. healthcare delivery system from that of other countries will be presented. An understanding of the U.S. health care system has specific implications for health services managers. Prerequisite: CHP 200.

**CHP 395. Topics in Health. 1-3 Credits.**

Study of selected topics. Prerequisite: permission of the instructor.

**CHP 400/500. Ethics in Health Administration. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: permission of the instructor. A survey of philosophical problems common to health sciences, including an analysis of the nature of health in its historical and contemporary contexts.

**CHP 415W/515. Critical Issues in Public/Community Health Administration. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or better. Identification and analyses of critical issues currently facing public/community health and the American health care system. This is a writing intensive course.

**CHP 420/520. Foundations of Gerontology. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: permission of instructor. Focuses on changes in the characteristics, status, and roles of the elderly; personality development, mental health, and adjustment of individuals with emphasis on biophysical and psychosocial processes as they influence capacity and performance in the elderly.

**CHP 425/525. Health Aspects of Aging. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CHP 420/520 or permission of the instructor. Identifies major issues and problems in meeting health care needs of the aged. Emphasis on role of social assets and supports in determining effects of life changes on the aging process.

**CHP 426/526. Skills in Health Services Administration I. 1-3 Credits.**

Lecture 2 hours; 1 hour web; 1-3 credits. Prerequisite: permission of instructor. Introduction of basic concepts which will allow for development of critical skills in a variety of managerial areas pertinent to the delivery of health care. Prerequisite: permission of instructor. Experts in various fields will provide students with useful strategies used in the administration of health care services.

**CHP 427/527. Skills in Health Services Administration II. 1-3 Credits.**

Lecture 2 hours; 1 hour web; 1-3 credits. Prerequisite: permission of instructor. Continuation of basic concepts and development of critical management skills pertinent to the delivery of health care. Experts in various fields will provide students with useful strategies in the administration of health care services.

**CHP 430W/530. Community Health Resources and Health Promotion. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or better and permission of the instructor. Designed to provide information about community health resources. This is a writing intensive course.

**CHP 440/540. Finance and Budgeting in Healthcare. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. This course covers financial management functions in healthcare organizations including operating and capital budgeting processes along with budgeting and financial controls.

**CHP 445/545. Health Services Research. 3 Credits.**

This course focuses on health services research and its assessment abilities and application in health care. Topics include the use of EXCEL, SAS, and SPSS to analyze data. An exploration of the issues and challenges of health services research for health related organizations and other organizations. Statistical procedures and practices will also be conducted. Prerequisite: STAT 130M.

**CHP 450/550. Public and Community Health Administration. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: permission of instructor. A review of the principles and practice of administering public and community health organizations and programs at federal, state, and local levels. Constitutional, statutory and administrative bases for organizing and conducting public/community health programs will be discussed. CHP 400, CHP 415W or CHP 430W, and CHP 450 meet the oral communication requirement in the major. All three courses must be taken to meet the requirement.

**CHP 455/555. Interpersonal and Counseling Skills for Health Professionals. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: permission of instructor. Study and practice in human relations for health practitioners. The course is designed to incorporate the latest and best techniques from the health sciences with a 'therapeutic use of self.'

**CHP 456/556. Substance Use and Abuse. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: permission of instructor. Focuses on facts about drugs and drug abuse, on value judgments concerning drugs, and on interaction of facts and value judgments. Emphasis is on drug abuse prevention.

**CHP 461/561. Managerial Epidemiology. 3 Credits.**

This course will blend theory and application of epidemiology. This course will also provide a comprehensive introduction to epidemiology and explain how to use epidemiological concepts and tools to improve decisions about the management of health services. Prerequisite: CHP 200.

**CHP 465/565. Policy and Politics of Health. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. This course will explore both health policy and the politics of health. Students will develop an understanding of the systematic and analytical framework for developing health and health care policy issues.

**CHP 470/570. Death, Dying and Survivorship. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: permission of instructor. Utilizes readings from sociology, psychology, literature, art, law, religion, and the medical and nursing sciences to explore death in its personal, cultural and professional significance. Audiovisual presentations and guest speakers will provoke thought and discussion to allow students to come to terms with their attitudes toward death and assist others in dealing with this important life experience.

**CHP 475/575. Healthcare Marketing. 3 Credits.**

Lecture 3 hours, 3 credits. Prerequisite: permission of the instructor. This course provides a basic understanding of marketing in a health care setting. It will cover the following: the history of marketing in a health care setting, health care markets, marketing techniques, and leadership skills in managing and supporting the marketing efforts.

**CHP 480/580. Health Ethics and the Law. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: permission of instructor. This course provides the students with a basic knowledge of health law and examines legal issues confronting health services administrators in various health care environments.

**CHP 485/585. Health Informatics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. This course focuses on healthcare informatics (information systems) and applications in health care organizations. It provides an overview of health information system concepts, management, and integration of technology in healthcare organizations.

**CHP 495/595. Topics in Public/Community Health Administration. 1-3 Credits.**

1-3 credits. Prerequisite: permission of the instructor. This course provides the opportunity for the study of selected topics in public/community health, including informatics, under the supervision of a faculty member.

**CHP 496/596. Topics in Public/Community Health Administration. 1-3 Credits.**

1-3 credits. Prerequisite: permission of the instructor. This course provides the opportunity for the study of selected topics in public/community health, including informatics, under the supervision of a faculty member.

**CHP 497/597. Readings in Public/Community Health Administration. 1-3 Credits.**

1-3 credits. Prerequisite: permission of the instructor. This course provides the opportunity for advanced investigations of selected issues/concerns in public/community health administration, under the supervision of a faculty member. It must be taken by students who wish to pursue topics not covered by regularly scheduled courses.

## COMM - Communications

### COMMUNICATIONS Courses

**COMM 101R. Public Speaking. 3 Credits.**

Preparation, delivery, and analysis of types of speeches with emphasis on extemporaneous speaking.

**COMM 103R. Voice and Diction. 3 Credits.**

An introduction to the analysis and practice of effective voice and articulation. Applications across various communication contexts, such as public communication, media, and social communication.

**COMM 112R. Introduction to Interpersonal Communication. 3 Credits.**

An introduction to concepts, processes, and effects of communication in personal and social relationships. Emphasis on fundamental communication skills necessary for the formation and maintenance of relationships.

**COMM 126R. Honors: Public Speaking. 3 Credits.**

Open only to students in the Honors College. A study of the theory, strategies, and techniques of public speaking with emphasis on its application to effective conflict resolution.

**COMM 195. Topics in Communication. 1-3 Credits.**

A study of selected topics designed for non-majors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in a booklet distributed to all academic advisors.

**COMM 196. Topics in Communication. 1-3 Credits.**

A study of selected topics designed for non-majors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in a booklet distributed to all academic advisors.

**COMM 200S. Introduction to Human Communication. 3 Credits.**

An introduction to the discipline and methods of human communication. Survey of the major approaches to studying communication across the range of human communication contexts and functions.

**COMM 225. Introduction to Production Technology. 3 Credits.**

Fundamentals of construction, lighting, and production techniques in contemporary theatre and film. Students will apply acquired skills to active productions for ODU Theatre and Film productions.

**COMM 226S. Honors: Introduction to Human Communication. 3 Credits.**

Open only to students in the Honors College. An introduction to the discipline and methods of human communication. Survey of the major approaches to studying communication across the range of human communication contexts and functions.

**COMM 227A. Honors: Film Appreciation. 3 Credits.**

Open only to students in the Honors College. This class will focus on both contextual and close text analysis of masterworks as they have influenced film art and industry. Students in this course are expected to develop basic research, communication, viewing and critical thinking skills as they apply their knowledge to the analysis of the film experience.

**COMM 260. Understanding Media. 3 Credits.**

An examination of mass communication--books, newspapers, magazines, radio, TV, film, sound recordings, and the Internet--as a global institution, industry, and social force. Media literacy skills are emphasized, as are matters of technology, content, economics, history and impact.

**COMM 270A. Film Appreciation. 3 Credits.**

This class focuses on both contextual and close text analysis of masterworks as they have influenced film art and industry. Students in this course are expected to develop basic research, communication, viewing and critical thinking skills as they apply their knowledge to the analysis of the film experience.

**COMM 271. Introduction to Filmmaking. 3 Credits.**

This course will introduce the beginning student to making movies. Students will learn the basics of working with cameras, lights, sound recording, video editing and post production. This is a hands-on production course.

**COMM 300. International Sojourning. 3 Credits.**

This course is designed to prepare ODU study-abroad students for successful international sojourns. Topics to be covered include culture, culture shock, reverse culture shock and strategies for a successful study-abroad experience. Prerequisites: junior standing or permission of instructor.

**COMM 301. Critical Methodologies. 3 Credits.**

This survey course introduces students to critical methodologies utilized in the study of media texts. Through case studies and hands-on exercises, students will learn how to study the production, consumption, and engagement with popular culture and how to decode its meanings. Prerequisites: COMM 260.

**COMM 302. Communication Research Methods I. 3 Credits.**

An introduction to communication research from a social science perspective. Experiment, survey, content analysis and observational approaches are covered. Students learn statistical data collection and data analysis techniques. Prerequisites: STAT 130M, COMM 200S and six hours of 300-400 level communication courses or permission of instructor.

**COMM 303. Introduction to Public Relations. 3 Credits.**

A study of interactions within and among communication workplaces and the public. Attention is given to the media, promotions, community relations, and public information. Prerequisites: COMM 200S or permission of the instructor.

**COMM 304. Advanced Public Speaking. 3 Credits.**

An analysis and expression of professional speeches, delivered in public, business and special occasion contexts. Attention is given to audience analysis, library research, development of arguments/evidence as content, creation and use of professional visual aids, expression of appropriate verbal and nonverbal speech cues, speaker credibility, and extemporaneous delivery skills. Prerequisites: COMM 101R.

**COMM 305. Professional Communication. 3 Credits.**

An examination of both the theory and practice of communication in the professional setting. Content includes communication theory, as well as the roles of interpersonal, small group, organizational, and mass media communication as related to the workplace. A student receiving credit for COMM 305 cannot receive credit toward the Communication major for COMM 200S. Prerequisites: Junior standing or permission of instructor.

**COMM 306. Diplomatic Communication. 3 Credits.**

This course is designed to familiarize students with the basic elements of diplomatic communication by providing them with an overview of the language, the protocol, contact practices, and administrative policies of the Diplomatic Corps. Students will be trained in the technical aspects of diplomatic discourse from resolution writing to mission briefings, and the ever-evolving use of computers and other electronic modes of communication in carrying out government business. Prerequisites: COMM 300 or COMM 400W.

**COMM 307. Understanding European Film. 3 Credits.**

This course provides students with an historic overview of films from a variety of European countries. Students gain the vocabulary necessary to analyze individual films and for the comparative analysis of films from different cultural and historical contexts. The course will focus on issues such as national and individual identity, film as aesthetic form, gender and sexuality, and popular culture. Prerequisites: Junior standing or permission of instructor.

**COMM 308. Public Relations Writing. 3 Credits.**

This course is designed to introduce students to the basic elements of public relations writing. Through an examination of scholarly texts, case studies and media coverage of public relations scenarios, students will develop an understanding of the crucial role that writing plays in effective public relations. Students will also be required to complete several writing assignments that relate to actual public relations scenarios. Prerequisites: COMM 303 or permission of the instructor.

**COMM 314. Nonverbal Communication. 3 Credits.**

An introduction to the theories, processes and effects of communication in nonverbal codes. Topics include kinesics, proxemics and paralanguage. Critical analysis and contemporary research emphasized. Prerequisites: Junior standing and COMM 200S, or permission of the instructor.

**COMM 315W. Communication Between the Sexes. 3 Credits.**

An overview of communication theory and research examining verbal and nonverbal communication between men and women. Topics include communication differences as a function of gender, theories that seek to explain these differences, and prescriptions for change: "the hope of androgyny." (This is a writing intensive course.) Prerequisites: Junior standing, COMM 200S, and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, or permission of the instructor.

**COMM 321. Production Management for Television and Stage. 3 Credits.**

This course assists students in understanding the elements of production management both in television and on stage. The course emphasizes organizational and communication skills; technical production knowledge; professional rehearsal and performance protocol according to the rules of AEA, AFTRA and SAG as well as basic production budgeting and scheduling. Prerequisites: Junior standing or permission of the instructor.

**COMM 323. Leadership and Events Management. 3 Credits.**

The course covers the systematic process of organizational assessment from basic communication channels (verbal, printed, and electronic modes of communication), to interpersonal and group communication, to the management of events and staff. This course examines the importance of leadership roles within organizations in planning any event as well as the communication dynamics between management and those being supervised. Prerequisites: COMM 200S or permission of the instructor.

**COMM 325. Sound Design for Stage and Camera. 3 Credits.**

This class introduces the concepts and techniques of sound design and sound effects for the stage and camera. Students learn design of sound elements in both a live and recorded environment as well as learn the current equipment and software in digital sound reproduction. Prerequisites: Junior standing or permission of the instructor.

**COMM 326. Foundations of Group Communication. 3 Credits.**

An introduction to the study of communication in task groups. Course reviews foundational literature and emphasizes communication competencies relevant to optimizing group outcomes including group observation, participation, assessment, and leadership. Prerequisites: Junior standing and COMM 200S or permission of the instructor.

**COMM 330. The Short Script. 3 Credits.**

This course introduces the principles of screenwriting using the short script as a basis for the exploration. The intent of the course is to introduce concepts of format, characterization, plot, dialogue and narrative style for the short script. Prerequisites: Junior standing or permission of the instructor.

**COMM 331. Argumentation and Debate. 3 Credits.**

Study of the principles of argumentation; frequent practice in debating current public problems. Prerequisites: COMM 101R or permission of the instructor.

**COMM 333. Persuasion. 3 Credits.**

An overview of the rhetorical and social scientific theories and research about persuasion and applications in speeches and campaigns. Prerequisites: COMM 200S or permission of the instructor.

**COMM 335W. Rhetorical Criticism. 3 Credits.**

With the goal of being able to critique a communication event, students study a variety of rhetorical approaches that may include neo-Aristotelian, generic, feminist, metaphoric, fantasy theme, and pentadic approaches to rhetorical criticism. (This is a writing intensive course.) Prerequisites: COMM 101R and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, or permission of the instructor.

**COMM 337. Model League of Arab States. 3 Credits.**

A study of the basic principles of negotiation and diplomacy through the vehicle of a simulation. Students study political, economic and social issues that impact upon the Middle East, research and prepare issue positions and debate/discuss these positions in a model. Prerequisites: COMM 101R.

**COMM 340. Media and Popular Culture. 3 Credits.**

This course examines the basic ways in which the mass media intersect with the currents of contemporary culture. Both historical and critical approaches to the study of mass communication and popular culture trace the full implications of their mutual determination and interdependence. Prerequisites: COMM 260.

**COMM 341. Lighting Design for Stage and Film. 3 Credits.**

This is a production course introducing students to the world of light and shadow, mood and composition by surveying lighting design, its technologies for stage and camera, and such principles as basic electrical theory and stage/studio/location design aesthetics. Prerequisites: COMM 225/THEA 225 and COMM 271/THEA 271 or permission of instructor.

**COMM 346. Screenwriting I. 3 Credits.**

A course that exposes the student to the fundamental narrative screenwriting principles taught through text reading, film viewing and analysis, class discussions, and writing assignments. Prerequisites: Junior standing.

**COMM 348. Acting for the Camera. 3 Credits.**

This course examines the process of building characters for the camera, and the ways in which the conventions of the stage are adapted for the film or video audience. Prerequisites: THEA 152.

**COMM 349. Costume Design for Stage and Camera. 3 Credits.**

This course explores the design aesthetic, historical context, and contemporary impact on performance of the costume garment and its accessories. Students explore the application of design principles in a practical experience. Prerequisites: THEA 244.

**COMM 351. Interpersonal Communication in Organizations. 3 Credits.**

Focuses on communication theory, research, and applications of a variety of forms of communication in organizational relationships. Topics include superior-subordinate communication, interviewing, and presentations with an emphasis on a diversity of perspectives and types of organizations. Prerequisites: Junior standing and COMM 200S or permission of the instructor.

**COMM 355. Organizational Communication. 3 Credits.**

Focuses on critical analysis of theory and research organizations as functional communication systems at the individual, dyadic, small group, and organizational levels. Topics include information processing, problem solving, impression management, compliance gaining, and network analysis. Prerequisites: COMM 200S or permission of instructor.

**COMM 364. Radio. 3 Credits.**

Focuses on programming, station practices, ownership, and operations of radio stations in the context of past, present, and future market and regulatory restrictions. Demonstration audio tapes and station visits required. Prerequisites: COMM 260 or permission of the instructor.

**COMM 365. Electronic News. 3 Credits.**

Theory and techniques of preparing news for the electronic media, including evaluation of newscasts and news reports for radio, television, and cable. Electronic news on the local, national, and international levels is analyzed as an institution and as a social force. Prerequisites: COMM 260 or permission of instructor.

**COMM 366. Public Journalism in the Digital Age. 3 Credits.**

This course exposes students to conventional and alternative approaches to reporting in public journalism. Students use a combination of conventional and alternative approaches as they research, interview, and construct a story on a local community issue or concern. Prerequisites: ENGL 110C and ENGL 211C; ENGL 380 or ENGL 382 or COMM 260; or permission of the instructor.

**COMM 367. Cooperative Education. 1-3 Credits.**

Available for pass/fail grading only. Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience takes place. May be repeated for credit. (Qualifies as a CAP experience.) Prerequisites: Approval of the department and Career Management, in accordance with the policy for granting credit for Cooperative Education programs.

**COMM 368. Internship. 3,6 Credits.**

A structured work experience with or without remuneration, in a communication-related field. A paper, a log and portfolio of work time plus satisfactory evaluations by supervisor and cooperating faculty member are required. Available for pass/fail grading only. (Qualifies as a CAP experience.) Prerequisites: Approval of department chair prior to registration.

**COMM 369. Research Practicum. 3 Credits.**

A structured research experience, under the supervision of communication faculty member. A paper evaluating/analyzing the research, a log of research progress, and satisfactory evaluation by the supervising faculty are required. (Qualifies as a CAP experience.) Prerequisites: Completion of core courses and 6 hours of upper-level major courses; approval of supervising faculty and department chair prior to registration.

**COMM 370. The Video Project. 3 Credits.**

A studio course that presents an opportunity for the student to produce digital video content. This is a hands-on course which is organized to allow the student to experience the entire process of developing a project for the camera from scripting through filming to editing and finishing detail. Prerequisites: THEA 271 or COMM 271 and junior standing or permission of the instructor.

**COMM 371. History of Animation. 3 Credits.**

This course traces the evolution of the animated film worldwide, from the silent to the modern era. The purpose of the course is to provide students with a broad chronological and international overview of animated film masterworks. Prerequisites: Junior standing or permission of the instructor.

**COMM 372T. Introduction to New Media Technologies. 3 Credits.**

Introduction to new media practices and theories. Focuses upon the powers of composition, networked communities, information management, social networking and identification in digital environments. Students will examine practical applications such as blogging, online mapping and tagging, online collaborative work such as wikis and self composition in online social networks. Prerequisites: Junior standing or permission of the instructor.

**COMM 375. Television Production. 3 Credits.**

This course explores the basic process of producing television from script to presentation. Prerequisites: COMM 271 or THEA 271 or permission of the instructor.

**COMM 380. The Video Documentary I. 3 Credits.**

This course offers the student an opportunity to explore the world of documentary filmmaking. By using the camera as a research tool in developing evidence in support of a thesis, the student is better able to understand documentary filmmaking. Students will develop projects leading towards the completion of a short documentary film or video. Prerequisites: COMM 271 or THEA 271.

**COMM 382. Reporting News for Television and Digital Media. 3 Credits.**

This course focuses on writing for television news and producing online news reports. Students will strengthen their journalistic skills and learn the importance of writing clearly for a viewing audience while working under newsroom deadlines. By the end of the course, students should feel confident in producing accurate, detailed reports for television news and online news sites. Prerequisites: ENGL 110C and ENGL 211C.

**COMM 383. Directing Movies. 3 Credits.**

A Director provides a movie's vision. This class will help students learn how to develop and articulate that vision. It will also explore the process of casting, working with actors, and collaborating with the other principle players on a movie, such as the Cinematographer, Production Designer, and Editor. Prerequisites: THEA 271 or COMM 271.

**COMM 385. Cinematography. 3 Credits.**

Introduces students to cinematography. The course explores camera technique, blocking actors, lighting, and cinematography fundamentals. The concepts of the course are applied to fiction and nonfiction cinema. This is a production class. Prerequisites: THEA 271 or COMM 271.

**COMM 386. Video and Audio Editing. 3 Credits.**

This course will cover post-production techniques, including: video editing utilizing Avid Media Composer, audio editing utilizing ProTools, and color correction utilizing DaVinci Resolve. Students will also learn how to properly import and organize material, move it between applications, and output deliverables. Prerequisites: THEA 271 or COMM 271.

**COMM 395. Topics in Communication. 1-3 Credits.**

A study of selected topics designed for non-majors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisites: Junior standing and permission of the instructor.

**COMM 396. Topics in Communication. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisites: Junior standing and permission of the instructor.

**COMM 400W/500. Intercultural Communication. 3 Credits.**

This course is designed to introduce students to the study of communication in cultural contexts, the purpose of which is to prepare one to live and work within an increasingly multicultural world. This is accomplished by defining and critically analyzing concepts of culture. Throughout the semester, the course will investigate theories of culture and communication that address the development of cultural identity, intercultural communication competence, the role of verbal and nonverbal communication across cultures, the cultural composition of the U.S., and ethical communication and challenge in a globalized era. (This is a writing intensive course.) Prerequisites: COMM 200S and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, or permission of instructor.

**COMM 401/501. Communication Theory. 3 Credits.**

An overview of general and contextual theories of communication. Focus is on the nature of communication theory, the role of theory in communication inquiry, and the relationships among theory, research, and practice. Prerequisites: COMM 200S or permission of the instructor.

**COMM 403/503. Public Relations and Crisis Communications. 3 Credits.**

This course introduces students to the basic elements of public relations as it pertains to assisting organizations avoid, mitigate and recover from crisis situations. Students will have the opportunity to both observe and participate in crisis communications situations. Prerequisites: COMM 303 or permission of instructor.

**COMM 405/505. Communication and Culture in the Middle East. 3 Credits.**

The course examines the tensions between modernity and tradition in the context of Middle East culture. Cultural variables for study include myth and religion, family structures and the use of science and technology. Prerequisites: Six hours of lower-level social science course work.

**COMM 407/507. Communication and Culture in Asia. 3 Credits.**

Course provides theoretical models for examining the values, communication patterns and cultural perspectives of the peoples of Asia. Films, folklore, newspapers and literature from Asia are investigated. Prerequisites: Six hours of lower level social science course work.

**COMM 412W/512. Interpersonal Communication Theory and Research. 3 Credits.**

A survey of classic and contemporary theories and research of communication in personal and social relationships across the lifespan. Emphasizes communication as a means to facilitate conditions for development of positive relational outcomes. (This is a writing intensive course.) Prerequisites: COMM 200S and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or better.

**COMM 421/521. Communication and Conflict Management. 3 Credits.**

Focus on theory and research of communication processes in conflict episodes across social and personal relational contexts. Applications of communication approaches to conflict management emphasized. Prerequisites: Junior standing and COMM 200S or permission of the instructor.

**COMM 423. Nonviolent Communication and Peace. 3 Credits.**

Perspectives on nonviolent communication and peace are covered from the micro level (e.g., individual beliefs and worldviews) to interpersonal relationships (e.g., conflict management), groups (e.g., tribes, gangs), organizational systems (e.g., businesses, governments), and macro or global level (e.g., political relationships between nations). Prerequisites: Junior standing.

**COMM 425/525. Family Communication Theory and Research. 3 Credits.**

A survey of classic and contemporary theories and research of communication in family units, family relationships, and family interfacing with society. The course emphasizes communication in the social construction of evolving 'family' realities as well as communication as means to facilitate conditions for development of positive domestic outcomes. Prerequisites: Junior standing and COMM 200S or permission of the instructor.

**COMM 426. Group Communication Theory and Research. 3 Credits.**

A survey of classic and contemporary theories and research of communication in task groups as well as the interconnections of task groups with societal institutions such as the family, government, and health care. Communication factors that facilitate conditions for creating and maintaining optimally functioning groups are emphasized. Prerequisites: COMM 200S and COMM 326.

**COMM 427/527. Children's Communication Theory and Research. 3 Credits.**

A survey of theories and research of communication during childhood. Emphasis is on children as developing communicators, their relationships, and their interactions with media. Factors affecting optimal development of children's communication and development of applications to enhance children's communication development are emphasized. Prerequisites: COMM 200S or permission of instructor.

**COMM 434/534. African-American Rhetoric Voices of Liberation. 3 Credits.**

With the goals of examining the rhetorical strategies and their historical context, students will study and critique original speeches and various forms of discourse by African-American speakers. Prerequisites: COMM 200S or permission of the instructor.

**COMM 441. The Music Industry and Communication. 3 Credits.**

This course will seek to better understand the music industry. To do this, the organization and operation of the modern music industry will be examined. Issues of publishing, copyright and intellectual property and technology will also be examined. Prerequisites: COMM 260 or permission of instructor.

**COMM 443/543. Hispanic Film. 3 Credits.**

A topical study of the major works of Spanish and Latin American film from Buneul to the present. The course will explore many issues, including those related to gender, race, symbolism, and class struggle. Prerequisites: COMM 270A or THEA 270A or permission of the instructor.

**COMM 444/544. German Cinema. 3 Credits.**

This course focuses on the German cinema from perspectives such as fascism and its legacy, film as historical critique, and Weimar cinema. Prerequisites: COMM 270A or permission of the instructor.

**COMM 445/545. Communication Analysis and Criticism. 3 Credits.**

A survey of the key methods used in critiquing various forms of human and mediated communication for the purpose of becoming more discerning consumers of public and mass mediated messages. Analysis will include films, television, and radio programs, advertisements, newspapers, public discourses, speeches, and conversations. Prerequisites: COMM 200S or permission of the instructor.

**COMM 446. Directing for the Camera. 3 Credits.**

This course seeks to provide students with fundamental principles and practical techniques of directing the narrative fiction film: script development and analysis, production planning, shot composition and framing, and working with actors and crew. Prerequisites: COMM 271 or THEA 271 and COMM 370 or THEA 370.

**COMM 447W/547. Electronic Media Law and Policy. 3 Credits.**

This course focuses on legal and policy issues related to modern media systems and technologies, with an emphasis on legal considerations of electronic media. Topics include First Amendment issues concerning news, programming, and advertising; station licensing; and challenges to traditional legal thought brought about by new technologies. (This is a writing intensive course.) Prerequisites: COMM 260 and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, or permission of the instructor.

**COMM 448/548. Transnational Media Systems. 3 Credits.**

An examination of the rise of broadcast technology and world flow of information and entertainment. Theory and policy issues of systems of broadcast ownership, access, regulation, programming, transborder, broadcasting and cultural imperialism and dominance of Western programming will be addressed. Prerequisites: COMM 260 or permission of the instructor.

**COMM 455/555. Critical Analysis of Journalism. 3 Credits.**

A critical examination of the news industry as practiced in the printed press, network and cable television, magazines, the Internet, and alternative press. Class examines the political economy of journalism, the sociology of journalistic practice, international news flows, ideological/political control of news, and mythological narrative forms within news. Prerequisites: COMM 260 or permission of instructor.

**COMM 456/556. Organizations and Social Influence. 3 Credits.**

Focuses on theories, research and applications of the social influence function of communication in a variety of organizational contexts. Examines traditional and nontraditional social influence theories and research as applied to organizational change. Prerequisites: COMM 333 or COMM 355 or permission of the instructor.

**COMM 465/565. Mass Media and the National Elections. 3 Credits.**

Focuses on use of media in presidential elections from 1952 to the present. Topics include image creation and management, and the relationship between media and voting behavior. Prerequisites: COMM 260, junior standing, or permission of the instructor.

**COMM 467/567. Media, Politics and Civic Engagement. 3 Credits.**

Focuses on the ways in which citizens develop knowledge of, engage with, and practice politics through mass media and personal media forms. Students examine historical and contemporary practices of civic engagement and political organizing via media such as the alternative press, talk radio, rebel radio, letters-to-the-editor, the Internet, cinematic representations, public access television, and others. Students seek to understand the power available to citizens for political engagement via mediated communication forms. Prerequisites: COMM 260 or permission of instructor.

**COMM 468/568. Communication and Political Symbolism. 3 Credits.**

The persistent communication and display of symbols and rituals of political meaning are central to how political power is built and legitimately exercised. This course examines such symbols and rituals by focusing on public rituals such as elections, the State of the Union address, and wars; political symbols such as the American and Confederate flag, Statue of Liberty, and television news; and institutions and practices related to public memory, such as war memorials, historical reenactments, museum and theme park displays, and firm narratives. Prerequisites: COMM 260 or permission of instructor.

**COMM 469. Communication Education Practicum. 3 Credits.**

An examination of communication education theory and methodology via structured experiences and readings. Students taking this course serve as teaching assistants for COMM 200S, which serves as a lab for practicing skills and techniques. Prerequisites: Completion of core courses and 6 hours of upper-level major courses, and approval of supervising faculty and department chair.

**COMM 471W/571. International Film History. 3 Credits.**

An examination of world cinema as a technology, a business, an institution, and an art form from its inception to the present. Emphasis is on the narrative fiction film, its technological and aesthetic development, economic organization, and socio-cultural context. Representative classic and contemporary works will be screened and analyzed. (This is a writing intensive course.) Prerequisites: COMM 270A or THEA 270A, a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, and junior standing or permission of the instructor.

**COMM 472/572. New Media Topics: Theories and Practices. 3 Credits.**

This upper-division seminar investigates one or two particular emergent new media practices and theories. The topics will be chosen at the discretion of the instructor but may include issues such as "mobile media," "micro media and audiences," and "social media." Prerequisites: COMM 372T or permission of the instructor.

**COMM 473/573. Television and Society. 3 Credits.**

The role of television in the cultural, psychological, and economic life of America. The structure and design of television programs; and the history and function of television in reinforcing or altering public perceptions of ideas, events, and people. Major critical approaches are employed in examining television's social impact and global reach. Prerequisites: Junior standing and COMM 260.

**COMM 478/578. Principles of Media Marketing and Promotion. 3 Credits.**

Course introduces students to the ways in which different media forms are used for advertising and marketing purposes. Emphasis is on electronic media, though other approaches, such as direct marketing techniques and the increasing use of new media technologies for marketing, are also examined. Prerequisites: Junior standing and COMM 260 or permission of the instructor.

**COMM 479W/579. American Film History. 3 Credits.**

An examination of American motion pictures as an art form, a business and an institution from inception to the present. Primary attention is accorded to the narrative fiction film, its aesthetic and technological development, economic organization and social impact. This course highlights the many connections between film history and American culture. (This is a writing intensive course.) Prerequisites: COMM 270A or THEA 270A, a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, and junior standing or permission of the instructor.

**COMM 480/580. The Video Documentary II. 3 Credits.**

This is a production/studio course designed to complete the preparatory work developed in THEA 380: The Video Documentary I. Discussion/presentation topics range from production field work to post-production editing. The final third of the semester will be devoted to compiling the rough footage in post production. Prerequisites: COMM 380 or THEA 380.

**COMM 481/581. The Documentary Tradition. 3 Credits.**

An in-depth investigation of the history and theory of the documentary tradition in film, television, and radio. Examining both American and international examples, the course will look at major schools, movements, goals, and styles of documentary production. Representative texts will be studied for their socio-political influences, persuasive techniques, and aesthetic formulas. Prerequisites: COMM 260 or permission of instructor.

**COMM 482. Screenwriting II. 3 Credits.**

Students explore visual storytelling through the theories guiding character development, narrative construction, thematic layers, scene analysis, and many more. Students participate in a variety of critical and writing exercises to enhance their knowledge of the craft of screenwriting. Prerequisites: COMM 346 or THEA 346.

**COMM 483. Advanced Video Project. 3 Credits.**

This course introduces students to the processes and techniques of a narrative film production. Students experience pre-production, production, and post-production phases in creating a product to be entered in regional and national competitions. Prerequisites: COMM 370 or THEA 370.

**COMM 485/585. Film and Television Genres. 3 Credits.**

This course is designed to examine the conventions and meanings of various film and television genres within their broader aesthetic, socio-historical, cultural, and political contexts. Each time the class is offered it will focus in depth on a different genre, such as the gangster, the Western, the musical, the comedy, science fiction, among others. Prerequisites: COMM 270A or THEA 270A or COMM 260.

**COMM 486/586. Advanced Filmmaking. 3 Credits.**

Offers the advanced film/video maker an opportunity to produce a project beyond the scope of previous classroom projects. Students come to the course in production teams (typically 5 members), with each member assigned a specific duty (cinematography, editing, directing, etc.). Students are permitted into the course solely by instructor approval and only after demonstration of superior skills in subordinate courses and acceptance of a submitted screenplay. Prerequisites: COMM 346 or THEA 346 and COMM 370 or THEA 370 and COMM 385 or THEA 385 and COMM 446 or THEA 446 and COMM 483 or THEA 483.

**COMM 495/595. Topics in Communication. 1-3 Credits.**

The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisites: Appropriate survey course or permission of the instructor.

**COMM 496/596. Topics in Communication. 1-3 Credits.**

The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisites: Appropriate survey course or permission of the instructor.

**COMM 497/597. Tutorial Work in Special Topics in Communication. 1-3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: Senior standing and approval of the department chair.

**COMM 498/598. Tutorial Work in Special Topics in Communication. 3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: Senior standing and approval of the department chair.

## COUN - Counseling

### COUNSELING Courses

**COUN 497. Topics in Counseling. 1-6 Credits.**

## CRJS - Criminal Justice

### CRIMINAL JUSTICE Courses

**CRJS 215S. Introduction to Criminology. 3 Credits.**

Introduction to criminology as a science, including the study of crime, criminals, and society's response to them.

**CRJS 222. The Criminal Justice System. 3 Credits.**

A study of social response to criminal behavior as cases move through the machinery of justice. Describes the interdependence of crime statistics, law enforcement, criminal courts, and correctional procedures for purposes of analyzing the entire system.

**CRJS 226S. Honors: Introduction to Criminology. 3 Credits.**

Open only to students in the Honors College. Special honors section of CRJS 215S.

**CRJS 262. Law and the Criminal Justice System. 3 Credits.**

The course covers both substantive and procedural law related to the definitions, investigations, processing and punishment of crimes. It is meant to provide the students with an overall understanding of the articulation between law and the criminal justice system.

**CRJS 316. Juvenile Delinquency. 3 Credits.**

A study of juvenile misbehavior in the contemporary community, its nature, extent, treatment, and control, including juvenile court procedure and philosophy. Prerequisites: CRJS 215S or SOC 201S or permission of instructor.

**CRJS 317. Correctional Institutions. 3 Credits.**

Examines the history of prisons and jails, their formal and informal organization, their effects on individuals, and issues and philosophies of penal reform. Prerequisites: CRJS 215S or CRJS 222 or permission of the instructor.

**CRJS 318. Probation, Parole and Community-Based Corrections. 3 Credits.**

Examines the history, law, administration and social setting of probation, parole and other noninstitutional sentencing alternatives. Also explores nontraditional alternatives to criminal adjudication such as arbitration and diversion programs. Prerequisites: CRJS 215S or permission of the instructor.

**CRJS 319. Public and Private Security. 3 Credits.**

The organization of security systems in public and private agencies and institutions. Prerequisites: CRJS 215S or permission of the instructor.

**CRJS 320. Law and Social Control. 3 Credits.**

Examines the creation, use and effectiveness of formal and informal mechanisms of social control for both criminal and noncriminal deviant behavior. Cross-cultural comparisons are given special emphasis. Prerequisites: CRJS 215S or permission of the instructor.

**CRJS 323. Police in American Society. 3 Credits.**

Examines the role of police in a free society. Police functions, subculture, community relations and decision making receive special attention. Problems such as police corruption, violence and the methods by which society attempts to control police behavior are also discussed. Prerequisites: CRJS 215S or CRJS 222 or permission of the instructor.

**CRJS 325. Women and Crime. 3 Credits.**

Examines the role of women as offenders, victims and employees of the criminal justice system. Theories of female criminality and the treatment of female offenders are explored. Attention is given to the victimization of women, specifically wife abuse and rape, problems of minority women, and the impact of current legislation. Prerequisites: CRJS 215S or permission of the instructor.

**CRJS 340. White-Collar Crime. 3 Credits.**

This course will describe and explain corporate, state-corporate, government (state) crime and crimes of globalization from sociological and criminological perspectives. Although the course will deal with the general topic of white collar crime, the specific focus will be on organizational offenders such as business corporations, government, state agencies and international finance organizations. Prerequisites: CRJS 215S.

**CRJS 344. Social Science and Crime Mapping. 3 Credits.**

A critical exploration of applying geographic information system (GIS) to view, understand, question, interpret, and visualize social science and crime data that reveal relationships, patterns, and trends. Students will learn to 1) frame a research question or hypothesis from a location-based perspective; 2) collect, create and examine geographically referenced demographic, social, and criminological data; 3) learn to use GIS mapping software to visualize, manage and analyze this data in order to investigate the relationship between geographic, demographic, social and criminological variables; and 4) arrive upon decisions and conclusions and communicate these via the creation of publishable maps. Prerequisites: SOC 201S or CRJS 215S or permission of the instructor.

**CRJS 345. Organized Crime: A Survey of Domestic and World-Wide Organized Crime Activities. 3 Credits.**

A broad survey of the history and consequences of organized crime in the United States and the world. Special focus will be directed at the economic, social and developmental effects of organized criminal activities. Prerequisites: CRJS 215S, CRJS 222, or CRJS 262.

**CRJS 350. Victimology. 3 Credits.**

Examination of the multifaceted problem of criminal victimization. Focuses on defining victimization, the incidents of victimization, social characteristics of victims, treatment of victims in the criminal justice system, and efforts designed to alleviate the consequences of victimization. Prerequisites: SOC 201S or CRJS 215S or six hours of social science perspective or permission of the instructor.

**CRJS 355. Crime and the Community. 3 Credits.**

This course focuses on the effect of crime on communities and the ways in which communities affect crime. The class considers both ethnographic community studies as well as larger-scale demographic analysis. Prerequisites: CRJS 215S or SOC 201S or permission of the instructor.

**CRJS 367. Cooperative Education. 1-3 Credits.**

Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place. Available for pass/fail grading only. (Qualifies as a CAP experience.) Prerequisites: Approval of the department and Career Management in accordance with the policy for granting credit for Cooperative Education programs.

**CRJS 368. Internship. 1-6 Credits.**

This course allows students to volunteer to work in an agency related to their major. Students must volunteer for 50 hours per course credit. (Qualifies as a CAP experience.) Prerequisites: Approval by the department internship director.

**CRJS 369. Practicum. 3-6 Credits.**

Field experience in a criminal justice area. (Qualifies as a CAP experience.) Prerequisites: Permission of the department chair.

**CRJS 395. Topics in Criminal Justice. 1-3 Credits.**

A study of selected topics designed for nonmajors or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisites: CRJS 215S or permission of the instructor.

**CRJS 396. Topics in Criminal Justice. 1-3 Credits.**

A study of selected topics designed for nonmajors or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisites: CRJS 215S or permission of the instructor.

**CRJS 401/501. Understanding Violence. 3 Credits.**

Examines a variety of forms of violence from suicide, child abuse, rape and family violence, terrorism, torture, death squads and the death penalty and hate violence. Explores the circumstances, rationalizations, patterns, explanations and effects on survivors. Prerequisites: CRJS 215S or SOC 201S or permission of instructor.

**CRJS 403. Violence in the World of Children. 3 Credits.**

This child-centered course examines the interaction of adults in violent conflict with the world of children, children's experience of violence and its meaning in the lives of children. Topics include: valuing children, violence toward children in culture, families, and schools; child physical and sexual abuse and neglect; gangs, violent communities and children and war. The effects of childhood experiences of violence, children's coping with violence, and alternatives to violence are also developed. Prerequisites: SOC 201S or CRJS 215S or six hours in human behavior or permission of the instructor.

**CRJS 408. Children's Rights and the Law. 3 Credits.**

A study of the law concerning children from a children's rights perspective. The rights of children in the US will be compared to other nations with special emphasis being placed on the UN Convention on the Rights of the Child. Prerequisites: SOC 201S OR CRJS 215S or related social science Way of Knowing or permission of the instructor.

**CRJS 410/510. Correctional Treatment. 3 Credits.**

Methods and programs which attempt to correct the behaviors of juvenile delinquents and adult criminal offenders are explored. Treatment strategies employed in both community and institutional settings are examined. Techniques of classification and the role of the correctional worker are also discussed. Prerequisites: CRJS 215S or CRJS 222 or permission of the instructor.

**CRJS 415. Courtroom As a Social System. 3 Credits.**

An overview of the role of all of the actors in the American courtroom, the interaction of these actors and the effect of social forces on their behavior. Includes prosecutor, plaintiff and defense lawyers, judges, juries, eye witnesses, expert witnesses, and court staff. Prerequisites: CRJS 222 or permission of the instructor.

**CRJS 416. The American Jury. 3 Credits.**

A review of the literature, law and practical materials that cover the American jury system from the creation of the master list through the verdict. Includes history, social context and jury selection. Prerequisites: CRJS 222 or permission of the instructor.

**CRJS 418. Crime, Society, and the Media. 3 Credits.**

A critical exploration of media portrayals of crime and criminal justice. News and entertainment genres are examined. Connections between the mass media and crime, culture, politics, society, and individual behavior receive special attention. Prerequisites: CRJS 215S or CRJS 222 or permission of the instructor.

**CRJS 421/521. Deviant Behavior. 3 Credits.**

A study of various definitions and forms of deviant behavior, theoretical explanations of causes of deviant behavior, and the impact of deviant behavior on society and the individual. Prerequisites: SOC 201S or CRJS 215S or permission of the instructor.

**CRJS 426W/526. Criminological Theory. 3 Credits.**

An in-depth study of the major theoretical issues in criminology. Deals extensively with issues of crime causation. (This is a writing intensive course.) Prerequisites: Senior standing, CRJS 215S, and grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, or permission of the instructor.

**CRJS 427/527. Violence Against Women. 3 Credits.**

A critical analysis of violence against women as an institution of social control. Examines violence in the context of social and political inequality and feminist critique. Issues explored include pornography, prostitution, sexual harassment, incest, battering and rape. Prerequisites: SOC 201S or CRJS 215S or other human behavior course or permission of instructor.

**CRJS 430. Homicide. 3 Credits.**

This course explores the topic of homicide in the U.S. It includes a discussion of the types of homicide, historical patterns and trends, and characteristics of offenders and victims. A variety of theoretical frameworks are utilized to examine homicide at micro and macro levels. In-depth examination of specific types of homicide is included. Prerequisites: SOC 201S or CRJS 215S or another human behavior course.



**CRJS 436. Capstone Research Project. 3 Credits.**

Students work in groups to plan, design, and carry out a research project. Final papers which report the results for the study are presented in a formal research seminar. The projects reflect knowledge gained from undergraduate work and training received in STAT 130M and SOC 337. Prerequisites: Senior standing, STAT 130M and SOC 337.

**CRJS 441/541. Drugs and Society. 3 Credits.**

The study of sociological and social-psychological explanations of drug-using behaviors and of legal and medical control of drugs. Topics include changes in the legal status of drugs, cross-cultural and historical variations in the control of drugs, and social epidemiology of drug use in contemporary society. Prerequisites: SOC 201S or CRJS 215S.

**CRJS 444. Community Justice. 3 Credits.**

This is a service learning course designed to study how the emerging field of community justice, a neighborhood-based strategy, can reduce crime and improve public safety by investing in social, human and cultural capital. Prerequisites: SOC 201S or CRJS 215S.

**CRJS 448/548. Women, Sex Discrimination and the Law. 3 Credits.**

This course introduces students to legal issues which specifically affect women and examines historical attitudes that have been used to justify differential treatment of women. It explores various legal approaches used to achieve equal protection under the law and examines a variety of specific topics such as: the equal protection analysis; Title VII and Title IX and their relationship to sex discrimination; affirmative action; and reproductive freedom. Prerequisites: CRJS 215S or permission of the instructor.

**CRJS 450/550. Blacks, Crime and Justice. 3 Credits.**

Examines historical and contemporary theories and research on African-Americans, criminal behavior and the administration of justice. Selected topics will include African-American perspectives, the death penalty, victimization, police brutality, and justice systems in Africa and the Caribbean. Prerequisites: CRJS 215S and CRJS 222 or permission of the instructor.

**CRJS 452. Diversity in Criminal Justice Organizations. 3 Credits.**

This course examines the impact of diversity, culture, and ethnic origin in criminal justice organizations. The course is designed to better prepare students to meet the challenge of diversity in criminal justice organizations. Prerequisites: SOC 201S or CRJS 215S or permission of instructor.

**CRJS 462/562. Substantive Criminal Law. 3 Credits.**

This course deals with the major substantive concepts involved in American criminal law, including development of criminal law, elements of criminal liability, defenses against criminal responsibility, and descriptions and definitions of specific offenses. Prerequisites: CRJS 215S or CRJS 222 or permission of the instructor.

**CRJS 475/575. Criminal Justice Systems Around the World. 3 Credits.**

The study of criminal justice systems around the world in order to understand how criminal behavior is defined and responded to in various cultures. Cultural differences will be highlighted in order to recognize that definitions of and responses to crimes closely reflect the cultures in which they exist. Prerequisites: CRJS 215S or CRJS 222 or permission of the instructor.

**CRJS 495/595. Topics in Criminal Justice. 3 Credits.**

The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisites: CRJS 215S or permission of the instructor.

**CRJS 496/596. Topics in Criminal Justice. 3 Credits.**

The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisites: CRJS 215S or permission of the instructor.

**CRJS 497/597. Tutorial Work in Special Topics in Criminal Justice. 1-3 Credits.**

Prerequisites: Senior standing and approval of the department chair. Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

**CRJS 498/598. Tutorial Work in Special Topics in Criminal Justice. 1-3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: Senior standing and approval of the department chair.

## CS - Computer Science

### COMPUTER SCIENCE Courses

**CS 101. Computers: An Introduction. 3 Credits.**

Lecture 3 hours, recitation 1 hour; 3 credits. Laboratory work required. An introductory course about computers and how they work. Students need no prior experience with computers. Students will receive instruction and hands-on experience with operating system, word processing, electronic spreadsheet, graphic presentation, and other software available in the university computer labs.

**CS 102. Introduction to Networks and the Internet. 3 Credits.**

Lecture 3 hours; recitation 1 hour; 3 credits. Laboratory work required. Introduction to networked computer systems that have access to the Internet with its vast information. Emphasis on a computer network's architecture, the University's network, electronic mail, World Wide Web, WWW browsers, and gaining access to information that resides on computer systems throughout the world. Knowledge of how to effectively use the Internet and the understanding of how and why it works are critical elements.

**CS 106. Intermediate Wordprocessing. 1 Credit.**

Lecture 1 hour; 1 credit. Intermediate coverage of wordprocessing to produce professional quality documents and reports. Computer-based training and a project-based approach teach students to solve the realistic problems of organization, formatting and display as they practice and learn the features of Microsoft Word.

**CS 107. Intermediate Spreadsheets. 1 Credit.**

Lecture 1 hour; 1 credit. An introduction to data management and analysis using spreadsheets. No prior computer experience required. Computer-based training using a project-based approach teaches students to solve realistic problems as they practice and learn the features in Microsoft Excel.

**CS 108. Intermediate Presentation Software. 1 Credit.**

Lecture 1 hour; 1 credit. An intermediate course in utilizing presentation software to produce quality slideshows. Computer-based approach teaches students to solve realistic problems as they practice and learn the features of Microsoft PowerPoint.

**CS 110. Introduction to Computer Science. 1 Credit.**

Lecture 1 hour; 1 credit. Available for pass/fail grading only. Introduction to the Computer Science Department, College of Sciences, Old Dominion University, and to the profession of computer science. This course provides students with a broad introduction to the scientific research efforts of computer science and the applications using those research efforts. Required for incoming computer science majors.

**CS 120G. Introduction to Information Literacy and Research. 3 Credits.**

Lecture 3 hours; 3 credits. Students will learn to locate, manage, critically evaluate and use information for problem solving, research and decision making. Includes collaborative tools for document development and office productivity tools for presentation. Information security, laws and etiquette related to use and access of information are covered.

**CS 121G. Introduction to Information Literacy and Research for Scientists. 3 Credits.**

Lecture 3 hours; 3 credits. Students will learn to locate, manage, critically evaluate and use information for scientific problem solving and research. Includes mathematical tools for data analysis and presentation and office and collaborative tools, as well. Information security, laws and etiquette related to use and access of information are covered.

**CS 126G. Honors: Introduction to Information Literacy and Research. 3 Credits.**

Lecture 3 hours; 3 credits. Open only to students in the Honors College. A special honors version of CS 120G.

**CS 133. Introduction to Programming in Java. 4 Credits.**

Laboratory work required. Introduction to computer-based problem solving and programming in Java. Topics include problem solving methodologies, program design, algorithm development, and testing. Java language concepts include variables, data types and expressions, assignment, control-flow statements, functions, arrays, and classes. Algorithms covered include sorting, searching, and linked list manipulations. Prerequisite: MATH 102M or MATH 103M.

**CS 150. Problem Solving and Programming I. 4 Credits.**

Laboratory work required. Introduction to computer-based problem solving and programming in C++. Topics include problem solving methodologies, program design, algorithm development, and testing. C++ language concepts include variables, data types and expressions, assignment, control-flow statements, functions, arrays, pointers, structs, and classes. Prerequisite: MATH 102M or MATH 103M or equivalent.

**CS 170. Introduction to Computer Architecture I. 3 Credits.**

Fundamentals of the architecture and operation of modern computers. Basic computer logic: logic equations; gates; combinatorial logic. Basic computer arithmetic: binary numbers; floating point representation. System hierarchy, overview of a computer; integrated circuit technology. Performance: metrics; choosing benchmarks; Amdahl's law. Instruction Sets and Operations: assembly language; machine language; examples of other instruction sets. Prerequisite: MATH 102M or MATH 103M and a grade of C or better in CS 150.

**CS 195. Topics. 1-3 Credits.**

Special topics in computer science that are not part of the current curriculum at the freshman/sophomore level.

**CS 250. Problem Solving and Programming II. 4 Credits.**

Lecture 3 hours; laboratory 2.5 hours; 4 credits. Prerequisites: MATH 162M and a grade of C or better in CS 150. Corequisite: CS 252. Laboratory work required. Design issues arising in software systems and C++ programming techniques aiding in their solution. Topics include the software life cycle, methods of functional decomposition, design documentation, abstract data types and classes, common data structures, dynamic data structures, algorithmic patterns, and testing and debugging techniques. Term project required.

**CS 252. Introduction to Unix for Programmers. 1 Credit.**

Laboratory work required. Available for pass/fail grading only. An introduction to Unix with emphasis on the skills necessary to be a productive programmer in Unix, Linux, and related environments. Topics include command line shells, files and directories, editing, compiling and common command line utilities. Prerequisites: A grade of C or better in CS 150.

**CS 270. Introduction to Computer Architecture II. 3 Credits.**

Fundamentals of the architecture and operation of modern computers. Building an ALU. The cache-Ram interaction. The virtual memory system. The Fetch/Execute cycle. Implementing a set of the ALU, Load/Store and Branch instructions in a single cycle implementation. Basics of microprogramming. Design of the control unit. A pipelined implementation. Multicores, multiprocessors and clusters. Prerequisites: A grade of C or better in CS 170 and in either CS 150 or CS 333.

**CS 295. Topics in Computer Science. 1-3 Credits.**

1-3 credits. Special topics in computer science which are not part of the current curriculum at the freshman/sophomore level.

**CS 300T. Computers in Society. 3 Credits.**

Lecture 3 hours, 3 credits. Prerequisite: ENGL 110C. Covers changes in the world's society due to continuing implementation of computing technologies. Evaluation of technological expansions in areas of governments, business/industry, education, medicine, transportation, communication and entertainment. Topics include: intellectual property, software piracy, computer crimes and ethics. Students must research a societal topic and present in written and oral forms.

**CS 312. Internet Concepts. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: CS 252. Laboratory work required. An in-depth introduction to the Internet and the World Wide Web for CS or similar majors as a basis for more advanced studies in Web programming. Topics include: historical and current development of the Internet Web document publishing. Internet design, communication, and application protocols and the tools that use them. Internet search tools and their design. Internet issues such as netiquette, copyright, spam, computer viruses, cookies, security, and future of the Internet.

**CS 330. Object-Oriented Programming and Design. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: MATH 163, CS 252 and a grade of C or better in CS 250 or CS 333. Laboratory work required. The techniques and idioms of object-oriented programming in C++ and Java. Methods of object-oriented analysis and design with the Unified Modeling Language. Multi-thread programs and synchronization.

**CS 333. Programming and Problem Solving in C++. 4 Credits.**

Lecture 4 hours; 4 credits. Prerequisites: MATH 163 and a grade of C or better in CS 150 (or an equivalent course in a high level language). Laboratory work required. Corequisite: CS 252. Topics include C++ syntax and semantics, principles of design and basic software engineering skills. This course satisfies the requirements of both CS 150 and 250. It is intended for the student who has already been introduced to programming, possibly in another language. This web-based course requires considerable maturity and independent responsibility on the part of the student.

**CS 334. Computer Architecture Fundamentals. 4 Credits.**

Lecture 4 hours; 4 credits. Prerequisites: MATH 163 and a grade of C or better in CS 150 (or an equivalent course in a high level language). Topics include: number representation, base conversion, Boolean algebra, combinatorial circuits, arithmetic units, registers, memory, hardware and microprogrammed control units, architecture of typical microcomputers, and the development of systems from basic components. The performance of competing architectures will be a major concern. This course satisfies the requirements of both CS 170 and 270. This web-based course requires considerable maturity and independent responsibility on the part of the student.

**CS 350. Introduction to Software Engineering. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: A grade of C or better in CS 330 or CS 361. Laboratory work required. Topics include: use of a defined software process (such as PSP), software costing methods, software metrics, quality assurance, inspection teams, testing methodologies, schedules and budgets, and configuration management. The course requires each student to participate as a member of a team in a significant team project. Each student will be required to demonstrate proficiency in several software development tools.

**CS 355. Principles of Programming Languages. 3 Credits.**

Survey of significant features of programming languages. Language types including imperative, functional, logical, and object-oriented are covered. Concepts include lexical and syntactic analysis, type systems, flow control, modularity, and parallel programming. Small programs in several languages required. Laboratory work required. Prerequisites: CS 252 and a grade of C or better in CS 250 or CS 333.

**CS 361. Advanced Data Structures and Algorithms. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: MATH 163, CS 252 and a grade of C or better in CS 250 or 333. Laboratory work required. Common abstract data types, including vectors, lists, stacks, queues, sets, maps, heaps, and graphs. Standard C++ interfaces for these ADTs. Generic programming via iterators and templates. Choosing data structures and algorithms to implement ADTs, via analysis of their time and space complexity.

**CS 367. Cooperative Education. 1-3 Credits.**

1-3 credits. Prerequisite: approval by the CS Department and Career Management in accordance with the policy for granting credit for Cooperative Education programs. Available for pass/fail grading only. Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place. Written report required. (qualifies as a CAP experience).

**CS 368. Computer Science Internship. 1-3 Credits.**

3 credits. Prerequisite: approval by CS Department and Career Management. Available for pass/fail grading only. Academic requirements will be established by the department and will vary with the amount of credit desired. Allows students to gain short duration career-related experience. An academic project may be required by the department to enhance the value of the educational experience. Written report required. (qualifies as a CAP experience).

**CS 381. Introduction to Discrete Structures. 3 Credits.**

Topics include propositional and predicate logic, rules of inference, methods of proof, set operations, functions, complexity of algorithms, growth of functions, induction, counting, relations, equivalence relations and graphs. Prerequisites: MATH 163 and a grade of C or better in CS 150 or CS 333.

**CS 382. Introduction to JAVA. 1 Credit.**

Lecture, 1 hour; 1 credit. Prerequisites: A grade of C or better in CS 250 or CS 333. Laboratory work required. An introduction to the Java programming language for students who are familiar with programming in C++. Topics include basic language syntax, data structures, control flow, classes, exception handling, and basic elements of the Java API. This web-based class requires independent responsibility and online communication skills on the part of the student.

**CS 390. Introduction to Theoretical Computer Science. 3 Credits.**

Elementary study of theoretical aspects of computer science. Topics in formal languages and automata theory are covered including regular languages, regular expressions, finite automata, context-free languages, pushdown automata, grammars, Turing machines, and unsolvable problems. Prerequisites: A grade of C or better in CS 381 and CS 250 or CS 333.

**CS 395. Topics in Computer Science. 1-3 Credits.**

1-3 credits. Prerequisite: permission of the instructor.

**CS 410/510. Professional Workforce Development I. 3 Credits.**

Lecture 3 hours; recitation 1 hour; 3 credits. Prerequisites: A grade of C or better in CS 300T and CS 350. Laboratory work required. Provides students with challenges of business environments in developing a technology based project. Students identify a societal problem, identify solutions, define project solutions, develop project objectives, conduct feasibility analysis, establish organizational group structure to meet project objectives and develop formal specifications. Students make formal technical project presentations and develop web documentation. Students prepare a draft grant proposal.

**CS 411W/511. Professional Workforce Development II. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: A grade of C or better in ENGL 211C or 221C or 231C and a grade of C or better in CS 330 and 410. Laboratory work required. Students write professional and non-technical documents and continue the development of the project defined in CS 410. Written work is reviewed and returned for corrective rewriting. Students will design and develop a project prototype, and demonstrate the prototype to a formal panel along with delivering the formal product specifications and a draft formal grant proposal. (qualifies as a CAP experience) (This is a writing intensive course.).

**CS 417/517. Computational Methods and Software. 3 Credits.**

Laboratory work required. Algorithms and software for fundamental problems in scientific computing. Topics: properties of floating point arithmetic, linear systems of equations, matrix factorizations, stability of algorithms, conditioning of problems, least-squares problems, eigenvalue computations, numerical integration and differentiation, nonlinear equations, iterative solution of linear systems. Prerequisites: MATH 316 and a grade of C or better in CS 250 or CS 333.

**CS 418/518. Web Programming. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: A grade of C or better in CS 312 and 330. Laboratory work required. Overview of Internet and World Wide Web; web servers and security, HTTP protocol; web application and design; server side scripts and database integration, and programming for the Web.

**CS 431/531. Web Server Design. 3 Credits.**

Laboratory work required. Extensive coverage of the hypertext transfer protocol (HTTP), specifications and commentary (IETF RFCs), and implications for servers and clients. Students will develop a web server providing common HTTP functionality and implementing all HTTP (including unsafe and conditional) methods, content negotiation, transfer and content encoding, basic & digest authentication, and server-side execution of programs (i.e., dynamic resources). Frequent in-class demonstrations of progress and protocol conformance will be required. Prerequisites: CS 150, familiarity with Internet and network (including socket) programming.

**CS 441/541. App Development for Smart Devices. 3 Credits.**

Laboratory work required. Project-oriented coverage of the principles of application design and development for Android platform smart devices. Topics include user interface; input methods; data handling; network techniques; localization and sensing. Students are required to produce a professional-quality mobile application. Prerequisite: CS 330 or CS 382.

**CS 450/550. Database Concepts. 3 Credits.**

Laboratory work required. Three level database architecture. The relational database model and relational algebra. SQL and its use in database procedures and with conventional programming languages. Entity relationship modeling. Functional dependencies and normalization. Transactions, concurrency and recovery. Prerequisites: A grade of C or better in CS 381 and either CS 330 or CS 361.

**CS 451/551. Software Engineering Survey. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: A grade of C or better in CS 330 or 361. Laboratory work required. Evaluation of software development methodologies. Topics include: software life cycle models, software specification and design methodologies, informal specification techniques, formal specifications, design tools, software analysis, quality assurance, life cycle management, software costing models and complexity.

**CS 454/554. Network Management. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: A grade of C or better in CS 455. Laboratory work required. The administration of computer networks and their interaction with wide area networks: network topologies for local and wide area networks, common protocols and services, management of distributed file services, routing and configuration, security, monitoring and trouble-shooting.

**CS 455/555. Introduction to Networks and Communications. 3 Credits.**

Internet and the 5-layered protocol architecture for the Internet, applications built on top of data networks, specifically the Internet, the web, the transport layer, TCP and UDP protocols, the network layer, the data link layer, also some of the technologies for the physical layer. Prerequisites: CS 250 or CS 333, CS 252, CS 270.

**CS 456/556. Database Administration I. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: A grade of C or better in CS 381 and either CS 330 or 361. Laboratory work required. Programming in SQL and PL/SQL and hands-on development of DBA administration skills in the ORACLE database environment. Creating database objects, querying and manipulating, and PL/SQL programming constructs. Setup and administer databases. Create, organize, and manage database files, users, privileges and other resources.

**CS 457/557. Database Administration II. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: A grade of C or better in CS 456/556. Laboratory work required. Advanced DBA administration skills in the Oracle database environment. Topics in planning and implementing backup and recovery of the database. Performance optimization and tuning of database and applications including memory and disk structures. Configuration and maintenance of clients and servers in a network environment.

**CS 458/558. Unix System Administration. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: experience with UNIX. Laboratory work required. Aspects of administering a SOLARIS/UNIX operating system in a networked environment are covered. Topics covered include installation, file system management, backup procedures, process control, user administration, device management, Network File Systems (NFS), Network Information Systems (NIS), UNIX security, Domain Name Services (DNS), and integration with other operating systems.

**CS 460/560. Computer Graphics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: A grade of C or better in CS 361. Laboratory work required. An introduction to graphical systems and methods. Topics include basic primitives, windowing, transformations, hardware, interaction devices, 3-D graphics, curved surfaces, solids, and realism techniques such as visible surface, lighting, shadows, and surface detail. Requires project involving OpenGL programming.

**CS 462/562. Cybersecurity Fundamentals. 3 Credits.**

The course introduces the basic components and concepts needed for understanding cybersecurity. These include basics and security vulnerabilities of networks, operating systems, databases, and distributed systems. In addition, some fundamentals of security enforcement will be introduced and discussed. Prerequisite: CS 270.

**CS 463/563. Cryptography for Cybersecurity. 3 Credits.**

Mathematical foundations including information theory, number theory, factoring, and prime number generation; Cryptographic protocols including basic building blocks and protocols; Cryptographic techniques including key generation and key management, and applications; Cryptographic algorithms--DES, AES, Stream Ciphers, Hash functions, digital signatures, etc. Prerequisite: CS 270.

**CS 464/564. Networked Systems Security. 3 Credits.**

Authentication in cyber systems including password-based, address-based, biometrics-based, and SSO systems; Authorization and accounting in cyber systems; Securing wired and wireless networks; Secured applications including secure e-mail services, secure web services, and secure e-commerce applications; Security and privacy in cloud environments. Prerequisite: CS 463 or CS 563.

**CS 465/565. Information Assurance. 3 Credits.**

Introduction to information assurance. Metrics, planning and deployment; identity and trust technologies; verification and evaluation, incident response; human factors; regulation, policy languages, and enforcement; legal, ethical, and social implications; privacy and security trade-offs; system survivability; intrusion detection; fault and security management. Prerequisites: CS 462 or familiarity with computer security area.

**CS 471. Operating Systems. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: A grade of C or better in CS 270 and 361. Laboratory work required. Operating system structures. Multiprogramming and multiprocessing. Process management. Memory and other resource management. Storage management, I/O systems, distributed systems. Protection and security. The concepts will be illustrated through example systems such as Unix and Windows.

**CS 472. Network and Systems Security. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: A grade of C or better in CS 361. Laboratory work required. Basic protocols, techniques and programming issues to secure network and computer systems. Topics include: cryptographic algorithms and concepts (Secret Key Cryptography, Hashes and Message Digests, Public Key and Authentication); Security Standards (Kerberos, Public Key Infrastructure, IPsec, SSL/TLS); Security applications (PEM, S/MIME, PGP, HTTP, Firewalls); Hands-on programming using OpenSSL.

**CS 475/575. Introduction to Computer Simulation. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: STAT 330 and a grade of C or better in CS 330 or 361. Laboratory work required. Efficient implementation methods. Time management. Planning and design of simulation experiments. Statistical issues in simulation. Generation of random numbers and stochastic variates. Programming with graphically- and text-based simulation languages. Verification and validation of simulation models. Distributed simulation. Special topics such as HLA will be discussed.

**CS 476/576. Systems Programming. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: A grade of C or better in CS 330 and 361. Laboratory work required. This course is to help students fully understand and utilize the internal workings and capabilities provided by modern computing, networking and programming environments. Topics include: Shell Script Programming, X Windows (Xlib and Motif), UNIX internals (I/O, Processes, Threads, IPC and Signals), Network Programming (UDP/TCP Sockets and Multicasting) and Java Systems Programming (SWING, Multithreading and Networking).

**CS 478/578. Computational Geometry, Methods and Applications. 3 Credits.**

The discipline of Computational Geometry is devoted to the study of algorithms which are formulated in terms of spatially embedded arrangements of objects, such as points, lines, surfaces, and solids. This course covers fundamental algorithms including convex hulls, polygon triangulations, point location, Voronoi diagrams, Delaunaytriangulations, binary space partitions, quadtrees, and other topics. Prerequisites: CS 361 and MATH 211.

**CS 480/580. Introduction to Artificial Intelligence. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: A grade of C or better in CS 361. Laboratory work required. Introduction to concepts, principles, challenges, and research in major areas of AI. Areas of discussion include: natural language and vision processing, machine learning, machine logic and reasoning, robotics, expert and mundane systems.

**CS 486/586. Introduction to Parallel Computing. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: MATH 316; knowledge of a high level language. Laboratory work required. The motivation for and successes of parallel computing. A taxonomy of commercially available parallel computers. Strategies for parallel decompositions. Parallel performance metrics. Parallel algorithms and their relation to corresponding serial algorithms. Numerous examples from scientific computing, mainly in linear algebra and differential equations. Implementations using public-domain network libraries on workstation clusters and computers.

**CS 487. Applied Parallel Computing. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: A grade of C or better in CS 270 and either CS 361 or CS 330. (CS 417 or linear algebra is recommended.) Laboratory work required. Fundamental concepts of parallel computing: Machine models, architectures, parallel topologies and languages, parallel algorithm design and parallel programming, architecture independent message passing interface (MPI) communication library, and scaled-speedup. Group project required.

**CS 488/588. Principles of Compiler Construction. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: A grade of C or better in CS 361. Laboratory work required. Theoretical and practical aspects of compiler design and implementation. Topics will include lexical analysis, parsing, translation, code generation, optimization, and error handling.

**CS 495/595. Topics in Computer Science. 1-3 Credits.**

Special topics. Prerequisite: permission of the instructor.

**CS 497/597. Independent Study in Computer Science. 1-3 Credits.**

1-3 credits. Prerequisite: permission of the instructor. Independent study under the direction of an instructor.

## CSD - Communication Sciences and Disorders

### COMMUNICATION SCIENCES AND DISORDERS Courses

**CSD 351. Anatomy of Speech, Language, and Swallowing. 3 Credits.**

Study of the psycholinguistic, acoustic, anatomical, and physiological aspects of speech and language, as well as anatomical and physiological aspects of swallowing. Prerequisites: permission of the instructor.

**CSD 352. Phonetics. 3 Credits.**

Study of the production and classification of sounds in American English; practice in phonetic transcription. Prerequisites: permission of the instructor.

**CSD 447. Introduction to Language Disorders in Children. 3 Credits.**

This course presents an introduction to the various language disorders manifested by children and adolescents with a focus on characteristics, etiologies and general intervention approaches. Prerequisite: Grade of C- or higher in CSD 453.

**CSD 448/548. Speech-Language and Hearing Programs in the Public Schools. 3 Credits.**

The emphasis of this course is on the organization and administration of public school speech-language and hearing programs, as well as clinical, professional and legal issues related to service delivery. Prerequisites: CSD 450 and CSD 460.

**CSD 449W. Introduction to Clinical Procedures in Speech-Language Pathology. 3 Credits.**

This course provides an introduction to basic clinical procedures and competencies in speech-language pathology with an emphasis on language sampling and identification of grammatical categories. Professionals practicing in the field of speech-language pathology require these skills. This course includes structured and supervised observation activities. ASHA requires 25 supervised hours of therapy observation. (This is a writing intensive course.) Prerequisite: Grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; and grade of C- or better in ENGL 350.

**CSD 450/550. Survey of Communication Disorders. 3 Credits.**

This course is designed to acquaint the student with recognition, identification, and understanding of speech and language disorders. Prerequisites: permission of the instructor.

**CSD 451/551. Articulation and Phonological Disorders. 3 Credits.**

This course emphasizes causes, identification and treatment of articulation and phonological disorders. Prerequisites: CSD 352 and CSD 450.

**CSD 452/552. Voice Disorders. 3 Credits.**

This course focuses upon anatomical and physiological bases, etiologies, assessment and treatment of voice disorders. Prerequisites: Grade of C- or better in CSD 351.

**CSD 453/553. Language Development. 3 Credits.**

This course emphasizes language development from the perspective of the speech-language pathologist. Prerequisite: Grade of C- or better in CSD 450.

**CSD 454/554. Clinical Practica in Speech Pathology/Audiology I-II-III. 4 Credits.**

These practica are designed to provide students with experiences in the evaluation and treatment of communication disorders. (qualifies as a CAP experience) Prerequisites: CSD 351, CSD 352, CSD 449W or CDSE 597, CSD 450 or CSD 550, CSD 451 or CSD 551, CSD 453 or CSD 553, CSD 460 or CSD 560, and permission of program faculty.

**CSD 457. Language Diagnosis and Remediation. 3 Credits.**

This course acquaints the student with diagnostic methods and remediation techniques for the language-disordered and nonverbal child. Prerequisites: CSD 450 and CSD 453.

**CSD 458/558. Speech and Hearing Science. 3 Credits.**

The content of this course focuses upon basic acoustics, speech acoustics, psychoacoustics, speech perception, and clinical laboratory instrumentation. The course is designed to provide fundamental information regarding normal and abnormal aspects of speech and hearing processes. Prerequisites: Grade of C- or better in CSD 460.

**CSD 459/559. Augmentative and Alternative Communication Methods and Materials. 3 Credits.**

This course focuses upon current augmentative and alternative communication methods, equipment, and materials that are utilized in the management of severe communication disorders. Prerequisites: Grade of C- or higher in CSD 450.

**CSD 460/560. Hearing Disorders and Basic Audiometry. 3 Credits.**

A study of the physics of sound, anatomy, and physiology of the human ear, basic audiometry and hearing disorders. Prerequisites: Permission of instructor.

**CSD 461/561. Aural Rehabilitation I. 3 Credits.**

A study of audiological findings and the implications for hearing therapy; speech and language development of the deaf. Prerequisite: Grade of C- or better in CSD 460.

**CSD 465/565. Signing I-Beginning Nonverbal Communication. 3 Credits.**

Study of the grammatical structure and use of American sign language; exposure to ideals and culture of the deaf community. (This course does not satisfy the general education foreign language skills requirement.) Prerequisites: permission of the instructor.

**CSD 466. Sign Language II. 3 Credits.**

Advanced studies of the grammar and symbols of American Sign Language, and appreciation for concepts and issues surrounding deaf culture. (This course does not fulfill the general education foreign language requirement.) Prerequisites: Grade of C- or higher in CSD 460 and CSD 465.

## **CYTO - Cytotechnology**

### **CYTOTECHNOLOGY Courses**

**CYTO 403. Gynecological Screening Laboratory. 3 Credits.**

Laboratory experience in the screening of gynecological smears. Prerequisites: Acceptance into the Cytotechnology Program and/or permission of the cytotechnology program director. Pre- or corequisite: CYTO 405 and CYTO 415.

**CYTO 404. General Pathology. 3 Credits.**

This course is an overview of general disease processes and causes in the human. All body systems will be covered including respiratory, gastrointestinal, circulatory, nervous, reproductive, and urinary. Aging, dietary, and stress factors will be discussed in the disease process. Bacteria, fungi, and viruses will be discussed in general and for each body system. Neoplasms will be covered for each body site. This course will be of benefit to anyone interested in diseases of the human body or entering the medical field. (cross listed with MEDT 401) Pre- or corequisite: BIOL 250 and BIOL 251 or equivalent.

**CYTO 405. Normal Gynecological Cytology. 3 Credits.**

Introduction to histological and cytological features of the normal female genital tract with emphasis on normal and non-neoplastic abnormalities. Principles of cytological diagnostic techniques will be discussed. Prerequisites: Acceptance into the Cytotechnology Program or permission of program director. Pre- or corequisite: CYTO 403.

**CYTO 407. Clinical Histology. 3 Credits.**

This course consists of the systematic study of cellular components as well as the grouping/organization of tissues into major 'organ' systems. Microscopic and virtual identification and morphology of cells, tissues, and organ substructures will be emphasized. This course will be of benefit to anyone interested in diseases of the human body or entering the medical field. Prerequisites: permission of the instructor.

**CYTO 415. Abnormal Gynecological Cytology. 4 Credits.**

Introduction to diagnostic cytological techniques and pathology of the female reproductive tract with emphasis on premalignant and malignant changes. Pre- or corequisite: CYTO 403 and CYTO 405.

**CYTO 424. Respiratory Cytology. 3 Credits.**

Principles of diagnostic cytology and pathology of the respiratory tract, including benign conditions, inflammatory and infectious diseases, premalignant conditions and primary and metastatic malignancies. Pre- or corequisite: CYTO 405 and CYTO 415.

**CYTO 428. Cytopreparatory Techniques and Procedures. 2 Credits.**

Introduction to collection, processing, and preparation of cytologic samples from all body sites. Prerequisites: permission of program director.

**CYTO 442. Gastro-Intestinal Cytology. 2 Credits.**

Study of the pathology and cytology of the gastro-intestinal tract, including the oral cavity, esophagus, stomach, colon, and rectum. Emphasis on normal conditions, benign inflammatory, infectious, parasitic conditions, gastric ulcers, premalignant and malignant lesions. Pre- or corequisite: CYTO 405 and CYTO 415.

**CYTO 444. Genitourinary Cytology. 2 Credits.**

Study of the pathology and cytology of the genitourinary tract, with emphasis in normal conditions, benign inflammatory and infectious conditions, crystals, premalignant and malignant lesions. Pre- or corequisite: CYTO 405 and CYTO 415.

**CYTO 445. Breast Cytology. 3 Credits.**

Study of pathology and cytology of the breast, with emphasis on benign, inflammatory conditions, premalignant and malignant disease in both breast smears and fine needle aspirations. Pre- or corequisite: CYTO 405 and CYTO 415.

**CYTO 446. Body Fluids Cytology. 2 Credits.**

Study of the pleural, peritoneal and pericardial cavity fluids, synovial and cerebral spinal fluids, with emphasis on benign, inflammatory conditions, and primary and metastatic malignancies. Pre- or corequisite: CYTO 405 and CYTO 415.

**CYTO 448. Non-Epithelial Cytology. 2 Credits.**

Study of the pathology and cytology of non-epithelial lesions with emphasis on benign, inflammatory, and malignant conditions. Pre- or corequisite: CYTO 405, CYTO 415, CYTO 424, CYTO 444, CYTO 445, and CYTO 446.

**CYTO 455. Fine Needle Aspiration. 5 Credits.**

Study of specialized collection techniques, processing and diagnosis of fine needle aspirations from various body sites, including, but not limited to, thyroid, liver, lymph nodes, pancreas, lung, kidney, etc. Emphasis will be on benign, inflammatory, primary, and metastatic malignancies of all sites. Clinical practical application of these principles will be continued at the clinical sites. Pre- or corequisite: CYTO 405, CYTO 415, CYTO 424, CYTO 444, CYTO 445, and CYTO 446.

**CYTO 458. Cytology Internship I. 4 Credits.**

Directly supervised experience in a clinical setting: includes evaluation of gynecologic smears and study set assignments. Students will be exposed to cytopreparatory techniques. (qualifies as a CAP experience) Pre- or corequisite: CYTO 405 and CYTO 415.

**CYTO 468. Cytology Internship II. 4 Credits.**

Directly supervised experience in a clinical setting. Includes evaluation of gynecologic and non-gynecologic specimen slides and study set assignments. Students will pre-screen gynecologic and non-gynecologic smears and study set assignments. Students will be exposed to cytopreparatory techniques. (qualifies as a CAP experience) Pre- or corequisite: CYTO 405, CYTO 415, CYTO 424, CYTO 444, CYTO 445, and CYTO 446.

**CYTO 478. Cytology Internship III. 8 Credits.**

Directly supervised experience in a clinical setting. Includes evaluation of gynecologic and non-gynecologic smears and study set assignments. Students will be exposed to cytopreparatory techniques. (qualifies as a CAP experience) Pre- or corequisite: CYTO 405, CYTO 415, CYTO 424, CYTO 444, CYTO 445, CYTO 446, and CYTO 455.

**CYTO 495. Topics in Cytology. 1-3 Credits.**

Independent study of selected topics in clinical cytology. Review of cytologic specimens from various body sites Prerequisites: permission of the program director.

**CYTO 497. Cytology Senior Seminar. 2 Credits.**

Supervised experience consists of clinical cases and seminar presentations into current advances within the specialty of clinical cytology. A student research project and oral presentation of current journal articles and the research paper are required. Prerequisites: permission of the program director.

**CYTO 498. Topics. 1-3 Credits.**

## DANC - Dance

### DANCE Courses

**DANC 185A. Dance and Its Audience. 3 Credits.**

This course is designed to acquaint students with the components of theatrical dance performance, its historical and ethnic origins, its role as a creative expression of peoples and societies and its relationship to other art forms. Through films, videos, live performances, guest speakers, readings and discussions, students consider philosophical approaches to language, communication, aesthetics and style of choreography.

**DANC 195. Topics in Dance. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in a booklet distributed to academic advisors.

**DANC 196. Topics in Dance. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in a booklet distributed to academic advisors.

**DANC 201. Ballet Technique 1. 2 Credits.**

Introduction to classical ballet technique.

**DANC 211. Modern Dance Technique 1. 2 Credits.**

Introduction to modern dance technique.

**DANC 231. Ballroom Dance 1. 1 Credit.**

This class introduces students to basic American and Latin ballroom dance. Basic steps of the foxtrot, waltz, swing, tango, cha cha and rumba will be covered. Focus on rhythm, technique, leading and following is also included. This class is open to single students and couples.

**DANC 232. Ballroom Dance 2. 1 Credit.**

This class is a continuation of basic American and Latin ballroom dance. Basic steps of the foxtrot, waltz, swing, tango, cha cha and rumba will be covered. Focus is on rhythm, technique, leading and following. The class is open to single students and couples.

**DANC 233. Ballroom Dance 3. 1 Credit.**

This class is a continuation of American and Latin ballroom dance 2. Basic steps of the foxtrot, waltz, swing, tango, cha cha and rumba are covered. Focus is on rhythm, technique, leading and following. This class is open to single students and couples. Prerequisites: DANC 231 or DANC 232 or permission of the instructor.

**DANC 234. Ballroom Dance 4. 1 Credit.**

This class is a continuation of American and Latin ballroom dance 3. Basic steps of the foxtrot, waltz, swing, tango, cha cha and rumba are covered. Focus is on rhythm, technique, leading and following. This class is open to single students and couples. Prerequisites: DANC 231, DANC 232 or DANC 233 or permission of the instructor.

**DANC 235. Yoga 1. 2 Credits.**

An introduction to yoga postures, breathing exercises, and relaxation techniques that promote health, alleviate stress, improve skeletal alignment, and increase muscular strength and flexibility. Students are also introduced to the history and philosophy of yoga.

**DANC 236. Yoga 2. 2 Credits.**

A continuation of the study of yoga postures, breathing exercises, and relaxation techniques that promote health, alleviate stress, improve skeletal alignment, and increase muscular strength and flexibility. Students also continue the study of the history and philosophy of yoga. Prerequisites: DANC 235 or permission of the instructor.

**DANC 241. Pilates Mat Class I. 1 Credit.**

The Pilates method of body conditioning is an exercise system focused on improving flexibility and strength for the total body without building bulk. It is a series of controlled movements engaging the body and mind supervised by an extensively trained teacher. It promotes physical harmony and balance while providing a refreshing and energizing workout. Currently the Pilates method is used internationally by individuals at all levels of fitness as well as by dance companies, sports teams, fitness enthusiasts and physical therapists.

**DANC 242. Pilates Mat Class 2. 1 Credit.**

The Pilates method of body conditioning is an exercise system focused on improving flexibility and strength for the total body without building bulk. It is a series of controlled movements engaging the body and mind supervised by an extensively trained teacher. It promotes physical harmony and balance while providing a refreshing and energizing workout. Currently the Pilates Method is used internationally by individuals at all levels of fitness as well as by dance companies, sports teams, fitness enthusiasts and physical therapists. This course continues the concepts introduced in Pilates Mat Class 1. Prerequisites: DANC 241 or permission of the instructor.

**DANC 251. Tap Dance I. 1 Credit.**

Introduction to tap dance styles including classic, hoof and rhythm. Fundamental movements such as time steps, grab-offs, riffs, etc. are incorporated using counterpoint rhythms and challenges. Students gain an understanding of tap dance as an American art form.

**DANC 252. Tap Dance II. 1 Credit.**

Continuation of tap dance styles including classic, hoof and rhythm. Fundamental movements such as time steps, grab-offs, riffs, etc. will be incorporated and developed using counterpoint rhythms and challenges. Students gain an understanding of tap dance as an American art form. Prerequisites: DANC 251 or permission of the instructor.

**DANC 260. Introduction to Dance Technique. 1 Credit.**

This serves as an elective course for students interested in beginning their dance training in the spring semester. The class focuses on basic universal dance vocabulary and prepares students both physically and mentally to enter Ballet I, Modern Dance 1 or Jazz Dance 1 in the fall semester.

**DANC 261. Hip Hop. 1 Credit.**

This course will introduce students to the technical foundations of hip hop dancing and the experience of freestyling.

**DANC 295. Topics in Dance. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses appear in the course schedule, and are fully described in a booklet distributed to academic advisors.

**DANC 296. Topics in Dance. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses appear in the course schedule, and are fully described in a booklet distributed to academic advisors.

**DANC 302. Ballet Technique 2. 2 Credits.**

Continuation of classical ballet technique. Prerequisites: DANC 201 or permission of the instructor.

**DANC 303. Ballet Technique 3. 1-4 Credits.**

Continuation of ballet technique at an intermediate level. Prerequisites: DANC 302 or permission of the instructor.

**DANC 312. Modern Dance Technique 2. 2 Credits.**

Continuation of modern dance technique. Prerequisites: DANC 211 or permission of the instructor.

**DANC 313. Modern Dance Technique 3. 1-4 Credits.**

Continuation of modern dance technique at an intermediate level. Prerequisites: DANC 312 or permission of the instructor.

**DANC 321. Jazz Dance 1. 1 Credit.**

Prerequisites: DANC 201 or DANC 211 or DANC 260 or permission of instructor. Introduction to jazz dance technique.

**DANC 322. Jazz Dance 2. 1 Credit.**

Prerequisites: DANC 321 or permission of the instructor. Continuation of jazz dance technique.

**DANC 350. Dance Improvisation. 2 Credits.**

An exploration of movement through structured exercises, games and problems. Students participate in movement studies that explore improvisational approaches, devices and elements to gain skills in the art of improvisation. This course also includes group discussions of reading assignments and feedback sessions following the improvisations performed in class. Through readings, journal writings, and in-class exercises, students develop the skills to articulate what they see, feel and respond to as performers and observers. Prerequisites: DANC 201 or DANC 211 or permission of the instructor.

**DANC 360. Rhythmic Analysis. 1 Credit.**

A study of basic music theory specifically designed for the dancer. Emphasis is on score reading, accompaniment for dance, note values and rhythms as they directly relate to choreography in a classroom as well as in the rehearsal studio. Students perform movement studies based on rhythmic structures. Prerequisites: DANC 201 or DANC 211 or permission of the instructor.

**DANC 367. Cooperative Education. 1-3 Credits.**

Student participation for credit based on the academic relevance of the work experience, criteria and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience takes place. Available for pass/fail grading only. (Qualifies as a CAP experience.) Prerequisites: Approval of the department and Career Management.

**DANC 368. Internship. 3 Credits.**

A structured work experience with or without remuneration; a paper, a log and portfolio of work time plus satisfactory evaluations by supervisor and cooperating faculty member are required. Available for pass/fail grading only. (Qualifies as a CAP experience.) Prerequisites: Approval of department chair and Career Management.

**DANC 369. Practicum. 1-3 Credits.**

Field experience in dance. (Qualifies as a CAP experience.) Prerequisites: Permission of the instructor.

**DANC 370. Dance Composition 1. 2 Credits.**

Designed for dance majors or minors, this course is a study of the elements and craft of choreography through practical and written experience. Time, space and dynamics are explored through assigned movement studies. Projects are designed for the creative development of personal movement repertoire and compositional skills for the dancer, choreographer and dance educator. Prerequisites: DANC 211 and DANC 350 or equivalent (DANC 312, DANC 313, DANC 414, DANC 415, DANC 416).

**DANC 387. Dance Repertory and Performance 1. 1 Credit.**

Dance performance. Additional fees may be charged. (Qualifies as a CAP experience.) Prerequisites: Permission of the instructor.

**DANC 388. Dance Repertory and Performance 2. 1 Credit.**

Continuation of dance performance. Additional fees may be charged. (Qualifies as a CAP experience.) Prerequisites: DANC 387 or permission of the instructor.

**DANC 389W. Dance History from 1900 until the Present. 3 Credits.**

Designed for dance majors or minors, this course focuses on the lives and contributions of dance artists who have most influenced the history of dance as art since the turn of the 20th century. The class explores the many facets of dance and its relationship to other art forms. Also included is a major research project and presentation focusing on a specific dance history topic. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or equivalent.

**DANC 391. African-American Perspectives in Dance. 3 Credits.**

Focuses on the contributions of African-Americans to the world of American dance and concert dance. The influence of African dance and dances of the Caribbean Islands will also be explored. Prerequisites: DANC 185A or permission of the instructor.

**DANC 393. Anatomy and Kinesiology for Dance. 3 Credits.**

Designed for dance majors or minors, this course is an analysis of human motion through a study of anatomy and principles of kinesiology in relation to dance techniques. Prerequisites: DANC 201 and DANC 211 or permission of the instructor and concurrent enrollment in a dance technique class.

**DANC 395. Topics in Dance. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses appear in the course schedule, and are more fully described in a booklet distributed to academic advisors. Prerequisites: Permission of the instructor.

**DANC 396. Topics in Dance. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses appear in the course schedule, and are more fully described in a booklet distributed to academic advisors. Prerequisites: Permission of the instructor.

**DANC 404. Ballet Technique 4. 1-4 Credits.**

Continuation of ballet technique at an intermediate level. Prerequisites: DANC 303 or permission of the instructor.

**DANC 405. Ballet Technique 5. 1-4 Credits.**

Continuation of ballet technique at an advanced level. Prerequisites: DANC 404 or permission of the instructor.

**DANC 406. Ballet Technique 6. 1-4 Credits.**

Continuation of ballet technique at an advanced level. Prerequisites: DANC 405 or permission of the instructor.

**DANC 414. Modern Dance Technique 4. 1-4 Credits.**

Continuation of modern dance technique at an intermediate level. Prerequisites: DANC 313 or permission of the instructor.

**DANC 415. Modern Dance Technique 5. 1-4 Credits.**

Continuation of modern dance technique at an advanced level. Prerequisites: DANC 414 or permission of the instructor.

**DANC 416. Modern Dance Technique 6. 1-4 Credits.**

Continuation of modern dance technique at an advanced level. Prerequisites: DANC 415 or permission of the instructor.

**DANC 423. Jazz Dance 3. 1 Credit.**

Continuation of jazz dance technique at an intermediate/advanced level. Prerequisites: DANC 322 or permission of the instructor.

**DANC 424. Jazz Dance 4. 1 Credit.**

Continuation of jazz dance technique at an intermediate/advanced level. Prerequisites: DANC 423 or permission of the instructor.

**DANC 470. Dance Composition 2. 2 Credits.**

This course builds on the skills developed in Dance Composition 1, including the exploration of time, space and dynamics, with a focus on constructing fully realized group and solo dance compositions. Prerequisites: DANC 370 and permission of the instructor.

**DANC 488. Advanced Repertory and Performance. 1 Credit.**

Advanced performance. Additional fees may be charged. (Qualifies as a CAP experience.) Prerequisites: DANC 388 or permission of the instructor.

**DANC 489. Principles of Teaching Dance. 2 Credits.**

This course covers basic methods of movement education as applied to the teaching of ballet, modern dance, jazz, and movement for children. An understanding of anatomical structure and mechanics is utilized in the analysis of student performance in dance class. Specific objectives for dance exercises are explored. Practical experiences in the planning, organization and structure of technique classes of various styles are designed to prepare students as dance educators. (Qualifies as a CAP experience.) Prerequisites: Permission of the instructor.

**DANC 490. Pedagogy for Dance Educators. 3 Credits.**

Methods and instructional theories and strategies of movement education as applied to the teaching of ballet, modern dance, jazz, and movement for children. Practical experience in the structure, organization and assessment of dance arts programs for the K-12 public school setting. Prerequisites: A passing score on the Praxis I or equivalent instrument and admittance into the Teacher Education program.

**DANC 495/595. Topics in Dance. 1-3 Credits.**

The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses appear in the course schedule, and are more fully described in a booklet distributed to academic advisors. Prerequisites: Appropriate survey course or permission of the instructor.

**DANC 496/596. Topics in Dance. 1-3 Credits.**

The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses appear in the course schedule, and are more fully described in a booklet distributed to academic advisors. Prerequisites: Appropriate survey course or permission of the instructor.

**DANC 497/597. Tutorial Work in Special Topics in Dance. 1-3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: Senior standing and approval of the department chair.

**DANC 498/598. Tutorial Work in Special Topics in Dance. 1-3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: Senior standing and approval of the department chair.

**DANC 499. Senior Project. 1 Credit.**

Completion of a major research project during one's senior year on a topic of particular interest to the student. Topics to be selected under the direction of an instructor with conferences as appropriate. (Qualifies as a CAP experience.) Prerequisites: Senior standing and approval of the department chair.

## DNTH - Dental Hygiene

### DENTAL HYGIENE Courses

**DNTH 300. Dental Hygiene Theory I. 4 Credits.**

An introduction to the theoretical foundations of preventive and therapeutic oral health services used in the dental hygiene process. Emphasis is on prevention of disease transmission, patient assessment, basic dental hygiene instrumentation, oral health instruction, treatment planning and ethical decision making. (offered fall) Corequisite: DNTH 301. Pre- or corequisite: DNTH 302.

**DNTH 301. Dental Hygiene Services I. 3 Credits.**

Preclinical experience in the on-campus supervised clinic. Clinical and laboratory application of introductory skills essential to rendering oral health services to patients with emphasis on basic dental hygiene instrumentation and ergonomics. Offered each fall. (Qualifies as a CAP experience.) Pre- or corequisite: DNTH 300 and DNTH 302.

**DNTH 302. Oral Anatomy and Histology. 4 Credits.**

A study of the anatomical, histological, embryological and morphological features and development of the head, neck and dentition. Emphasis is on nomenclature, nerve and vascular innervation, muscles of mastication, orofacial embryology and histological features of the oral cavity for practice and forensic identification. Lab section covers nomenclature and anatomy of the dentition plus hands on experiences. Prerequisites: BIOL 250 and BIOL 251 or equivalent.

**DNTH 303. Applied Dental Materials. 3 Credits.**

An introduction to biomaterials with emphasis on those materials and techniques common in dental hygiene practice and used and maintained by the dental hygienist. (offered fall) Prerequisites: CHEM 105N-CHEM 106N.

**DNTH 304. Oral Radiology I. 2 Credits.**

Study of the nature and production of x rays and basic principles and procedures in oral radiology. Emphasis is on radiation physics, radiation biology, radiation protection and safety, basic intraoral radiographic techniques and imaging procedures. (offered fall) Prerequisites: permission of the instructor.

**DNTH 305. Dental Hygiene Theory II. 3 Credits.**

Continuation of study of the theoretical foundation of preventive and therapeutic oral health services used in the dental hygiene process. Emphasis is on preparation for ethical, evidence-based client care. (offered spring). Prerequisites: DNTH 300 and DNTH 301.

**DNTH 306. Dental Hygiene Services II. 3 Credits.**

Clinical experience in the on-campus supervised clinic. Continued development of clinical proficiency and ethical, evidence-based decision making in rendering comprehensive preventive oral health services using the dental hygiene process. Emphasis is on clinical application and development of competence in maintenance, management and evaluation of the periodontal patient; care planning, disease control strategies; and scaling and oral debridement on periodontally involved patients (offered spring). (qualifies as a CAP experience) Corequisite: DNTH 305. Prerequisites: DNTH 300, DNTH 301 and DNTH 304.

**DNTH 307. Pharmacology and Medical Emergencies. 2 Credits.**

A study of pharmacologic agents used in oral healthcare and of medications that the patient may be taking, their clinical effects, adverse effects, and dental implications, and the prevention and management of medical emergencies. Emphasis is on agents commonly used by patients which require the alteration of treatment procedures, therapeutic agents used adjunctively in dental hygiene therapy and agents used in medical emergency procedures. (offered spring) Prerequisites: DNTH 302 and BIOL 250-BIOL 251.



**DNTH 308. Oral Pathology. 3 Credits.**

Principles of the disease process and general pathology including cell injury, infection, inflammation, neoplasia and circulatory disturbances are followed by the study of pathology of the teeth, supporting and associated oral structures. Emphasis is on the clinical and radiological appearance of local and systemic disease processes affecting the oral and facial structures. (offered spring) Prerequisites: DNTH 302.

**DNTH 309. Oral Radiology II. 2 Credits.**

Continued development of the principles and techniques obtained in Oral Radiology I with emphasis on supplemental intraoral techniques especially for client management; extraoral techniques; radiographic interpretation of film-based and digitally acquired images; and use of dental photography in patient care. (offered spring) Prerequisites: DNTH 304.

**DNTH 310. Dental Hygiene Therapies and Practice. 3 Credits.**

Emphasis is on principles of periodontics, evaluation of periodontal disease, and theoretical and clinical preparation for delivery of dental hygiene interventions. (offered spring) Prerequisites: DNTH 300 and DNTH 301.

**DNTH 316. Dental Hygiene Theory and Services III. 3 Credits.**

Clinical experience in the on-campus supervised clinic. Continued development of clinical competency and ethical, evidence-based decision making in rendering comprehensive preventive and therapeutic oral health services using the dental hygiene process. (offered summer) (qualifies as a CAP experience) Prerequisites: DNTH 305, DNTH 306, DNTH 307 and DNTH 309.

**DNTH 317. Anxiety and Pain Control. 2 Credits.**

Clinical experience in the on-campus supervised clinic. Principles and techniques for local anesthesia injections and nitrous oxide-oxygen analgesia administration, neurophysiologic considerations, prevention of anesthesia-associated emergencies and application of techniques in laboratory. Five hours of instruction will be web-based. (Offered summer) (qualifies as a CAP experience) Prerequisites: DNTH 305, DNTH 306, DNTH 307, DNTH 309 and DNTH 316.

**DNTH 395. Topics in Dental Hygiene Practice. 1-6 Credits.**

Selected topics in dental hygiene vary by semester. (offered fall, spring, summer) Prerequisites: permission of the instructor.

**DNTH 397. Independent Study in Dental Hygiene. 1-6 Credits.**

Independent reading and study on a topic selected under direction of a faculty member. (offered fall, spring, summer) Prerequisites: permission of the instructor.

**DNTH 410. Dental Hygiene Theory IV. 3 Credits.**

Study of the psychosocial, physical and oral characteristics of patients with special needs. Emphasis is on the care and clinical management of the following patients: cognitively, developmentally and physically challenged, aged, pregnant, epileptic, diabetic, cancer, AIDS, chemically dependent and the blind and deaf. (offered fall) Prerequisites: DNTH 305, DNTH 306, and DNTH 316.

**DNTH 411. Dental Hygiene Services IV. 6 Credits.**

Clinical experience in the on-campus supervised clinic. Continued development of clinical proficiency and ethical, evidence-based decision making in providing comprehensive preventive and therapeutic oral health services. Emphasis is on clinical application and development of competencies for the treatment of diverse, special needs and periodontally involved patients using the dental hygiene process. (offered fall) (qualifies as a CAP experience) Corequisite: DNTH 410. Prerequisites: DNTH 305, DNTH 306, and DNTH 309.

**DNTH 412W/512. Perspectives on Dental Hygiene Practice. 3 Credits.**

Course is designed for the licensed dental hygienist who seeks to maintain an awareness of changing trends, perspectives, evidence-based interventions and technologies in dental hygiene, health, and society that influence the dental hygiene process of care. (Offered summer) (This is a writing intensive course.) Qualifies as a CAP experience. Prerequisites: grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C and permission of the instructor.

**DNTH 413. Community Oral Health Planning. 3 Credits.**

Introduction to the principles of dental public health, health literacy, oral epidemiology, evidenced-based prevention and control of oral disease on a population basis. Emphasis is on program assessment, planning, implementation, and evaluation for the development of community-based dental programs. This course prepares students for the role of oral health educator, client advocate and resource person in community settings. (offered fall) Prerequisites: DNTH 305, DNTH 306 or permission of the instructor.

**DNTH 414/514. Educational Concepts for the Health Professional I. 3 Credits.**

This course is designed to explore various educational concepts, principles and methods of teaching for adults. Students will learn to present educational information to a diverse client population, in a variety of settings, in an ethical and professional manner. Topics include, but are not limited to, objectives, planning, implementation and evaluation of instruction; instructional strategies; delivery models; presentation skills; and techniques for communicating health information. Prerequisites: permission of the instructor.

**DNTH 415/515. Research Methods in the Health Sciences. 3 Credits.**

Designed to develop skills in scientific methods, evidence based decision making and critical analysis of research findings. Emphasis on types of research, levels of evidence, problem selection and hypothesis writing, research planning and design, data collection and measuring techniques, analysis and interpretation of data, research proposal writing and computer application. A written research proposal is required for graduate credit. (offered fall) Prerequisites: STAT 130M.

**DNTH 416/516. Administrative Leadership and Professional Development. 3 Credits.**

A study of current trends that influence the profession of dental hygiene including oral health care delivery, manpower, financing mechanisms, quality improvement, third party payers, professional associations, regulatory agencies and legislation. Emphasis is on ethical, political, and legal issues as they relate to the dental hygiene profession. (offered spring) Prerequisites: permission of the instructor.

**DNTH 417W. Dental Hygiene Theory V. 3 Credits.**

Designed to transition students into diverse employment settings nationally and globally. Emphasis is on written communication skills, practice management, working in multicultural settings, selecting an employment setting, values clarification, resume writing, interview techniques, networking, ethical dilemmas and cross-cultural competencies necessary for contemporary healthcare environments. Various national and international career opportunities are explored. (This is a writing intensive course.) Prerequisites: DNTH 410, DNTH 411 and a grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C.

**DNTH 418. Dental Hygiene Services V. 6 Credits.**

Clinical experience in the on-campus supervised clinic. Continued development of proficiency and ethical, evidence-based decision making in providing comprehensive preventive and therapeutic oral health services within the dental hygiene process of care. Emphasis is on the development of competencies for the treatment of periodontally involved, special needs and diverse patients. (offered spring) (qualifies as a CAP experience) Corequisite: DNTH 417W. Prerequisites: DNTH 410 and DNTH 411.

**DNTH 419. Community Oral Health Practice. 3 Credits.**

Interprofessional service-learning experiences designed to prepare students to function as oral health practitioners, educators, client advocates and resource persons in community health settings. Emphasis is on providing evidenced-based educational, preventive and therapeutic services for special needs populations including geriatric, institutionalized and cognitively, developmentally and physically challenged individuals. Participation in planning, implementing and evaluating a community oral health project. Design and delivery of a poster session is required. (offered spring) Prerequisites: DNTH 413.

**DNTH 440T/540. Telehealthcare Technology. 3 Credits.**

This course examines the concept, global impact, and trends in telehealthcare technology on the client/patient, multidisciplinary practitioners, and various healthcare systems. Emphasis is on effective evidence-based decision making to reduce errors in patient care, promote care in remote or underserved geographical areas, and the ability to retrieve and evaluate healthcare information that improves access to quality, cost effective health care. (Offered spring, summer) Prerequisites: permission of the instructor.

**DNTH 450. International Dental Hygiene. 3 Credits.**

International locations are determined by the School of Dental Hygiene in conjunction with the Office of Study Abroad. Program participation requires approval from the School of Dental Hygiene and the Office of Study Abroad. Provides an on-location international experience in oral care delivery, practice and regulation, and dental hygiene education. Students will be required to give presentations, review the dental care delivery system, and explore how the cultural beliefs and practices affect oral health, dental care seeking behaviors, and the oral health status of the population. Orientations will be conducted prior to travel. Prerequisite: DNTH 414.

**DNTH 451. Ergonomics and Exercises for Static Posture Occupations. 1 Credit.**

This active participation course is designed for persons who work in static posture professions (e.g., dental hygienists, laboratory and computer office personnel) and who seek to practice ergonomic body mechanics and exercise therapies to prevent musculoskeletal disorders and repetitive strain injuries. Topics include biomechanics, types of disorders and injuries, risk management, comprehension and demonstration of full body exercises with emphasis on core strength training and self monitoring. (Offered summer only.) Prerequisites: permission of instructor.

**DNTH 495. Topics in Dental Hygiene. 1-3 Credits.**

Seminars on selected topics in dental hygiene. Topics vary by semester. (offered fall, spring, summer) Prerequisites: permission of the instructor.

**DNTH 497/597. Independent Study in Dental Hygiene. 1-6 Credits.**

Independent reading and study on a topic selected under direction of a faculty member. (Offered fall, spring, summer) Prerequisites: permission of instructor.

## ECE - Electrical and Computer Engineering

### ELECTRICAL AND COMPUTER ENGINEERING Courses

**ECE 111. Information Literacy and Research for Electrical and Computer Engineering. 2 Credits.**

An introductory course for ECE students that explores information literacy in terms of information basics, information need, searching, locating, and evaluating information sources, citing and ethics of information in relation to development and implementation of electrical and computer engineering projects. Prerequisites: ENGN 110 and MATH 162M.

**ECE 201. Circuit Analysis I. 3 Credits.**

An introduction to the analysis and theory of linear electrical circuits, including relevant mathematical background. Topics include: passive component definitions and connection rules; independent and dependent sources, concepts of power & energy; Kirchhoff's laws; development of network reduction techniques; formulation of mesh-current and node-voltage equations; network theorems including Thevenin, Norton, Maximum power transfer, and superposition Theorem, Operational Amplifiers, Two Port Networks (resistive), Energy Storage Elements, and initial conditions. Basics of matrices and linear algebra with Gaussian elimination; matrix applications to linear circuit analyses; MATLAB & PSPICE with analyses and applications to passive circuits. (offered fall, spring) Prerequisites: a grade of C or better in MATH 212. Pre- or corequisite: PHYS 232N.

**ECE 202. Circuit Analysis II. 3 Credits.**

Time domain analysis of first-order and second-order electrical circuits; Sinusoidal steady state analysis; Phasor representation of AC Circuits, Maximum power transfer and Thevenin-Norton theorems for AC circuits; Frequency response of circuits (with R, L, and C components), Laplace Transforms and transfer functions of linear circuits; extension to frequency domain circuit analysis including Bode plots; operational amplifiers with relevant circuit examples; two-port networks including Z- and Y-parameters; transformer concepts. PSPICE and MATLAB for DC and transient circuit analyses; theory & solution of linear ordinary differential equations with constant coefficients, complex numbers, Euler's formula and complex arithmetic; PSPICE and MATLAB implementation of AC response and analyses. (offered fall, spring, summer) Prerequisites: MATH 307 and a grade of C or better in ECE 201.

**ECE 241. Fundamentals of Computer Engineering. 4 Credits.**

This course develops the foundation of computer engineering for computer engineers as well as an introductory breadth appropriate for electrical engineers. Class topics include computer information, digital design (combinational and sequential circuits), computer organization, and assembly language. The laboratory includes building digital circuits (focusing on programmable logic), assembly language programming, and system interfacing. The use of a hardware description language is employed in class and the laboratory to specify, simulate and synthesize digital circuits. Prerequisites: CS 150 and MATH 211 with a grade of C or above for both.

**ECE 287. Fundamental Electric Circuit Laboratory. 2 Credits.**

Objective of course is to provide students in electrical and computer engineering with a 'hands-on' introduction to selected topics in electrical engineering. Students will use basic circuit analysis skills and C programming skills to design, build, and test electrical networks interfacing to a micro-controller. Labs will also provide an introduction to basic measurement techniques and electrical laboratory equipment (power supplies, oscilloscopes, voltmeters, etc). Prerequisites: A grade of C or better in both CS 150 and ECE 201. Pre- or corequisite: ECE 202.

**ECE 302. Linear System Analysis. 3 Credits.**

Generalized sinusoids. Operations with sinusoids. Complex exponentials. Signal properties, operations with signals and useful signal models. Concept of system, system properties, classification of systems, system modeling (input-output description and state-space description) for electrical circuits. Time-domain analysis of continuous-time systems including impulse response, total system response, stability, resonance phenomenon. Graphical convolution and use of MATLAB to calculate convolution. Fourier analysis of continuous-time signals including Fourier series for periodic signals and Fourier transform for aperiodic signals. Signal transmission through LTIC systems. Ideal and practical filters. State-space analysis of LTIC systems. State equations from transfer function. System realizations. Solution of state equations. Advanced matrix operation and linear algebra. Determinants, characteristic equation of a matrix, eigenvalues and eigenvectors, functions of matrices. Using MATLAB to calculate system response and determine frequency characteristics for signals and systems. (offered fall, spring). Prerequisites: MATH 307 and a grade of C or better in ECE 202.

**ECE 303. Introduction to Electrical Power. 3 Credits.**

AC steady state power, single-phase and three-phase networks, electric power generation, transformers, transmission lines, electric machinery and the use of power. Energy resources, power plants, renewable energy, electric safety. (offered fall, summer) Prerequisites: a grade of C or better in ECE 201.

**ECE 304. Probability, Statistics, and Reliability. 3 Credits.**

Introduction to probability, probability models, discrete and continuous random variables, statistics, reliability and stochastic processes. Examples discussed will focus on computer and electrical engineering applications that include both component- and system-level aspects. MATLAB and/or EXCEL are introduced as tools for data analysis, computation and simulation. Prerequisites: a grade of C or better in MATH 212.

**ECE 313. Electronic Circuits. 4 Credits.**

Introduction to junction diodes, bipolar junction transistors (BJTs), MOS field-effect transistors (MOSFETs) and operational amplifiers (op-amps). Design concepts for discrete analog circuits with diodes, BJTs, MOSFETs and op-amps. The lab component introduces design and techniques for implementation of analog circuits. Prerequisites: a grade of C or better in ECE 202. Pre- or corequisite: ECE 241.

**ECE 323. Electromagnetics. 3 Credits.**

An introduction to electromagnetic waves, wave propagation in various media; propagation across interfaces; propagation in waveguides and transmission lines. Antennas and radiation from antennas. Prerequisites: a grade of C or better in ECE 202.

**ECE 332. Microelectronic Materials and Processes. 3 Credits.**

An introduction to fundamental properties of semiconductors and device fabrication processes. The topics include crystal structure, bonding, energy bands, doping, carrier densities, mobility, resistivity, recombination, drift, and diffusion. Basic structure and operations of p-n junctions, BJTs and MOSFETs and their fabrication processes, including solid state diffusion, thermal oxidation of silicon, ion implantation, chemical vapor deposition, thin film deposition, photolithography and etching. (offered fall) Prerequisites: a grade of C or better in ECE 202.

**ECE 340. Digital Circuits. 4 Credits.**

Not open to electrical and computer engineering majors. This course develops the foundations of computer engineering for students outside of electrical and computer engineering. Class topics include computer information, digital design (combinational and sequential circuits), and computer organization. The laboratory includes building digital circuits (focusing on programmable logic), and system interfacing. The use of a hardware description language is employed in class and the laboratory to specify, simulate and synthesize digital circuits. Prerequisites: a grade of C or better in CS 150 and MATH 211.

**ECE 341. Digital System Design. 3 Credits.**

Tools and methodologies for top-down design of complex digital systems. Important topics include minimization, mixed logic, algorithmic state machines, microprogrammed controllers, creating and using a gold model, data and control path design and data movement and routing via buses. Design methodologies covered include managing the design process from concept to implementation, verification using a gold model, and introduction to design flow. A hardware description language is used extensively to demonstrate models and methodologies, and is also used in design exercises and projects. (offered fall, spring) Prerequisites: a grade of C or better in ECE 241.

**ECE 346. Microcontrollers. 3 Credits.**

A hands-on approach to microprocessor and peripheral system programming, I/O interfacing, and interrupt management. A sequence of projects requiring the programming and integration of a microcontroller-based system is conducted. Project assignments require a microcontroller evaluation board and accessories supplied by the student. (offered spring) Prerequisites: a grade of C or better in ECE 241.

**ECE 355. Introduction to Networks and Data Communications. 3 Credits.**

This course introduces the basic concepts of computer networks and data communications. Topics include protocol layers, the application layer, the transport layer, the network layer, the data link layer, and the physical layer. Students will learn how to use network packet analyzer tools to do simple network analysis. Emphasis is on gaining an understanding of network engineering as it relates to hardware configuration, system operation and maintenance. Prerequisites: ECE 304 and a grade of C or better in ECE 241.

**ECE 367. Cooperative Education. 1-3 Credits.**

Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place. (offered fall, spring, summer) (qualifies as a CAP experience) Prerequisites: approval by the department and Career Management in accordance with the policy for granting credit for Cooperative Education programs.

**ECE 368. Student Internship. 1-3 Credits.**

Academic requirements will be established by the department and will vary with the amount of credit desired. Allows students to gain short duration career-related experience. (qualifies as a CAP experience) Prerequisites: Approval by department and Career Management.

**ECE 369. Practicum. 1-3 Credits.**

Academic requirements will be established by the department and will vary with the amount of credit desired. Allows students an opportunity to gain short duration career related experience. (qualifies as a CAP experience) Prerequisites: approval by department and Career Management.

**ECE 371. Circuit Analysis. 3 Credits.**

Time domain analysis of first-order and second-order electrical circuits; Sinusoidal steady state analysis; Phasor representation of AC Circuits, Maximum power transfer and Thevenin-Norton theorems for AC circuits; Frequency response of circuits (with R, L, and C components), Laplace Transforms and transfer functions of linear circuits; extension to frequency domain circuit analysis including Bode plots; operational amplifiers with relevant circuit examples; two-port networks including Z- and Y-parameters; transformer concepts. PSPICE and MATLAB for DC and transient circuit analyses; theory & solution of linear ordinary differential equations with constant coefficients, complex numbers, Euler's formula and complex arithmetic; PSPICE and MATLAB implementation of AC response and analyses. (offered fall, spring) Prerequisites: MATH 307 and a grade of C or better in ECE 201.

**ECE 381. Introduction to Discrete-time Signal Processing. 3 Credits.**

This course covers fundamental digital signal processing techniques that form the basis for a wide variety of application areas. Topics include discrete-time signals and systems, time domain analysis, solutions of difference equations, Z-transform analysis, discrete Fourier transforms (DFT), sampling theorem, transform analysis of linear time-invariant systems, structure of discrete-time systems and introduction to power spectrum estimation. (offered fall) Prerequisites: ECE 302.

**ECE 387. Microelectronics Fabrication Laboratory. 3 Credits.**

The laboratory course will enable students to fabricate MOSFETs, MOS capacitors, diffused resistors and p-n diodes. Students will be trained to operate the equipment required for wet and dry oxidation, thin film deposition, solid state diffusion, photolithography, and etching. Students will fabricate and analyze the devices by current-voltage characteristic, capacitance-voltage characteristic, film thickness and conductivity measurements. (offered spring). Prerequisites: ECE 332.

**ECE 395. Topics in Electrical and Computer Engineering. 1-3 Credits.**

Topics in Electrical and Computer Engineering Prerequisites: departmental approval.

**ECE 396. Topics in Electrical and Computer Engineering. 1-3 Credits.**

Topics in Electrical and Computer Engineering Prerequisites: departmental approval.

**ECE 403/503. Power Electronics. 3 Credits.**

Power electronics provides the needed interface between an electrical source and an electrical load and facilitates the transfer of power from a source to a load by converting voltages and currents from one form to another. Topics include: alternating voltage rectification, Pulse Width Modulation (PWM), DC converters (Buck, Boost, Buck-Boost, Cuk and SEPIC converters), negative feedback control in power electronics, isolated switching mode power supply, flyback and forward power supply, solid state power switches, AC inverter. Prerequisites: MATH 307 and ECE 303.

**ECE 404/504. Electric Drives. 3 Credits.**

Electric drives efficiently control the torque, speed and position of electric motors. This course has a multi-disciplinary nature and includes fields such as electric machine theory, power electronics, and control theory. Topics include: switch-mode power electronics, magnetic circuit, DC motor, AC motor, Brushless DC motor, induction motor, speed control of induction motor, vector control of induction motor, stepper-motor. Prerequisites: ECE 201 and ECE 303.

**ECE 406/506. Introduction to Visualization. 3 Credits.**

The course provides a practical treatment of computer graphics and visualization with emphasis on modeling and simulation applications. It covers computer graphics fundamentals, visualization principles, and software architecture for visualization in modeling and simulation. (cross listed with MSIM 441/541) Prerequisites: a grade of C or better in CS 250.

**ECE 407/507. Introduction to Game Development. 3 Credits.**

An introductory course focused on game development theory and modern practices with emphasis on educational game development. Topics covered include game architecture, computer graphics theory, user interaction, audio, high level shading language, animation, physics, and artificial intelligence. Students will develop games related to science, technology, engineering, and mathematics (STEM) education. The developed games can run on a variety of computer, mobile, and gaming platforms. (cross listed with MSIM 408/508) Prerequisites: CS 361 or equivalent.

**ECE 410/510. Model Engineering. 3 Credits.**

The goal of this course is to develop understanding of the various modeling paradigms appropriate for capturing system behavior and conducting digital computer simulation of many types of systems. The techniques and concepts discussed typically include UML, concept graphs, Bayesian nets, Markov models, Petri nets, system dynamics, Bond graphs, etc. Students will report on a particular technique and team to implement a chosen system model. (cross-listed with MSIM 410) Prerequisites: MSIM 205. Pre- or corequisite: MSIM 320.

**ECE 441/541. Advanced Digital Design and Field Programmable Gate Arrays. 3 Credits.**

Course will provide a description of FPGA technologies and the methods using CAD design tools for implementation of digital systems using FPGAs. It provides advanced methods of digital circuit design, specification, synthesis, implementation and prototyping. It introduces practical system design examples. (Offered spring) Prerequisites: ECE 341.

**ECE 443/543. Computer Architecture. 3 Credits.**

An introduction to computer architectures. Analysis and design of computer subsystems including central processing units, memories and input/output subsystems. Important concepts include datapaths, computer arithmetic, instruction cycles, pipelining, virtual and cache memories, direct memory access and controller design. (offered fall) Corequisite: ECE 484W. Prerequisites: ECE 341 and ECE 346.

**ECE 451/551. Communication Systems. 3 Credits.**

Fundamentals of communication systems engineering. Modulation methods including continuous waveform modulation (amplitude, angle). Design of modulation systems and the performance in the presence of noise. Communication simulation exercises through computer experiments. Prerequisites: ECE 304 and ECE 302.

**ECE 452/552. Introduction to Wireless Communication Networks. 3 Credits.**

Introduction to current wireless network technologies and standards. The radio spectrum and radio wave propagation models (pathloss, fading, and multipath). Modulation, diversity, and multiple access techniques. Wireless network planning and operation. Current and emerging wireless technologies (satellite systems, vehicular/sensor networks). Prerequisites: ECE 304 and ECE 302.

**ECE 454/554. Introduction to Bioelectrics. 3 Credits.**

Covers the electrical properties of cells and tissues as well as the use of electrical and magnetic signals and stimuli in the diagnosis and treatment of disease. Typical topics to be covered include basic cell physiology, endogenous electric fields in the body, electrocardiography, cardiac pacing, defibrillation, electrotherapy, electroporation, electrotherapy in wound healing. In addition, ultrashort electrical pulses for intracellular manipulation and the application of plasmas to biological systems will be covered. Prerequisites: PHYS 111N or higher; MATH 200 or higher.

**ECE 455/555. Network Engineering and Design. 3 Credits.**

This course is an extension of ECE 355 into a semester long project. Emphasis is on gaining an understanding of networking design principles that entails all aspects of the network development life cycle. Topics include campus LAN models and design, VLANs, internetworking principles and design, WAN design, design of hybrid IP networks, differentiated vs. integrated services, traffic flow measurement and management. Prerequisites: ECE 355 or permission of the instructor.

**ECE 458/558. Instrumentation. 3 Credits.**

Computer interfacing using a graphical programming language with applications involving digital-to-analog conversion (DAC), analog-to-digital conversion (ADC), digital input output (DIO), serial ports, and the general-purpose instrument bus (GPIB). Analysis of sampled data involving use of probability density function, mean and standard deviations, correlations, and the power spectrum. (offered spring, summer) Prerequisites: PHYS 102N, PHYS 112N, or PHYS 232N and ECE 302.

**ECE 461/561. Automatic Control Systems. 3 Credits.**

Analysis and design of control systems via frequency and time domain techniques. Root locus, Bode and Nyquist techniques. Stability, sensitivity, and performance specifications. Cascade and feedback compensation. Computer-aided analysis and design. Pole placement through state variable feedback. Prerequisites: ECE 302.

**ECE 462/562. Introduction to Medical Image Analysis (MIA). 3 Credits.**

Introduction to basic concepts in medical image analysis. Medical image registration, segmentation, feature extraction, and classification are discussed. Basic psychophysics, fundamental ROC analysis and FROC methodologies are covered. Prerequisites: a grade of C or better in MATH 212.

**ECE 464/564. Biomedical Applications of Low Temperature Plasmas. 3 Credits.**

This course is cross listed between ECE and Biology. It is designed to be taken by senior undergraduate students and first year graduate students. The course contents are multidisciplinary, combining materials from engineering and the biological sciences. The course covers an introduction to the fundamentals of non-equilibrium plasmas, low temperature plasma sources, and cell biology. This is followed by a detailed discussion of the interaction of low temperature plasma with biological cells, both prokaryotes and eukaryotes. Potential applications in medicine such as wound healing, blood coagulation, sterilization, and the killing of various types of cancer cells will be covered. Prerequisites: Senior standing.

**ECE 471/571. Introduction to Solar Cells. 3 Credits.**

This course is designed to provide the fundamental physics and characteristics of photovoltaic materials and devices. A focus is placed on i) optical interaction, absorption, and design for photovoltaic materials and systems, ii) subsequent energy conversion processes in inorganic/organic semiconductor such as generation, recombination, and charge transport, and iii) photovoltaic testing and measurement techniques to characterize solar cells including contact and series resistance, open circuit voltage, short circuit current density, fill factor, and energy conversion efficiency of photovoltaic devices. (Offered fall, spring) Prerequisites: ECE 332.

**ECE 472/572. Plasma Processing at the Nanoscale. 3 Credits.**

The science and design of partially ionized plasma and plasma processing devices used in applications such as etching and deposition at the nanoscale. Gas phase collisions, transport parameters, DC and RF glow discharges, the plasma sheath, sputtering, etching, and plasma deposition. Prerequisites: ECE 323.

**ECE 473/573. Solid State Electronics. 3 Credits.**

The objective of this course is to understand basic semiconductor devices by understanding semiconductor physics (energy bands, carrier statistics, recombination and carrier drift and diffusion) and to gain an advanced understanding of the physics and fundamental operation of advanced semiconductor devices. Following the initial introductory chapters on semiconductor physics, this course will focus on p-n junctions, metal-semiconductor devices, MOS capacitors, MOS field effect transistors (MOSFET) and bipolar junction transistors. Prerequisites: ECE 313, ECE 323 and ECE 332.

**ECE 474/574. Optical Fiber Communication. 3 Credits.**

Electromagnetic waves; optical sources including laser diodes; optical amplifiers; modulators; optical fibers; attenuation and dispersion in optical fibers; photodetectors; optical receivers; noise considerations in optical receivers; optical communication systems. Prerequisites: ECE 323 and MATH 312.

**ECE 478/578. Introduction to Lasers and Laser Applications. 3 Credits.**

Introduction and review of electromagnetic theory; atomic physics and interactions of radiation with matter; two- and three-level systems, and rate equations; gain; single- vs. multimode; homogeneous and inhomogeneous broadening; Q-switching and mode-locking; semiconductor lasers; vertical cavity surface emitting lasers (VCSELs); Raman spectroscopy, remote sensing and ranging; holography; and laser ablation. Prerequisites: ECE 323 and MATH 312.

**ECE 483/583. Embedded Systems. 3 Credits.**

This course covers fundamentals of embedded systems: basic architecture, programming, and design. Topics include processors and hardware for embedded systems, embedded programming and real time operating systems. Prerequisites: ECE 346.

**ECE 484W. Computer Engineering Design I. 3 Credits.**

Emphasis is on the design of a complex digital circuit and microcontroller interfacing. A semester-long project involves the design, simulation and testing of a digital architecture and software GUI. Several moderate scale digital modules are designed, simulated, implemented and tested during the semester. Design methods incorporate CAD design tools, implementation with advanced integrated circuit technology and contemporary software tools. Oral and written communication skills are stressed. This is a writing intensive course. (offered fall) (qualifies as a CAP experience) Corequisite: ECE 443. Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; ECE 341 and ECE 346. Pre- or corequisite: ECE 313.

**ECE 485W. Electrical Engineering Design I. 3 Credits.**

Part one of the senior capstone design experience for electrical engineering majors. Lectures focus on providing professional orientation and exploration of the design process. Small group design projects focus on the development of electronic subsystems. Oral and written communication skills are stressed. (This is a writing intensive course.) (qualifies as a CAP experience) (offered fall, spring) Prerequisites: ECE 313 and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C. Pre- or corequisite: ECE 303, ECE 304, ECE 323, and ECE 332.

**ECE 486. Preparatory ECE Senior Design II. 2 Credits.**

The course is the preparatory, proposal development section of part two of the senior capstone design experience for electrical and computer engineering majors. The course will focus on developing a proposal for a group design project. The senior design projects aim at developing engineering design skills of a complete computer/electrical system. Elements of developing a successful proposal are emphasized along with written communication skills. Industry-sponsored multi-disciplinary design projects are an option. (qualifies as a CAP experience) Pre- or corequisite: ECE 484W or ECE 485W.

**ECE 487. ECE Senior Design II. 2 Credits.**

Part two of the senior capstone design experience for electrical and computer engineering majors. In this course, students will implement the design proposal developed in ECE 486. The senior design projects aim at developing engineering design skills of a complete computer/electrical system. Oral and written communication skills are emphasized. Industry-sponsored multi-disciplinary design projects are an option. Prerequisites: ECE 486.

**ECE 488. ECE Senior Design III. 3 Credits.**

Part three of the senior capstone design experience for electrical and computer engineering majors. Individual and group design projects focus on the development of complete electrical and computer systems. Oral and written communication skills are stressed. Industry-sponsored multi-disciplinary design projects are an option. (qualifies as a CAP experience) Prerequisites: ECE 487.

**ECE 491. Microelectronics Design Experience. 3 Credits.**

This is a Virginia Microelectronics Consortium (VMEC) hands-on, state-of-the-art summer research experience. The VMEC internship provides excellent technical knowledge as well as industrial and academic contacts for career development. Students complete a 10-13 week summer project on a microelectronics research or design activity at an engineering school or in the State-of-the-Art Cleanroom of industry members of the VMEC at Micron Technology, Inc in Manassas, VA or at British Aerospace Engineering (BAE). For eligibility, the student has to apply to the VMEC program and must be selected as a VMEC Student Scholar in a competition held late in the fall semester of each academic year. Each student will be required to give a least two formal oral reports and one formal poster presentation summarizing the research results at the end of the summer session. The project must be completed at an institution other than Old Dominion University. Students will be supervised by faculty or industry mentors at the summer location, but must also have an Old Dominion University co-advisor and instructor of record for the course. Prerequisites: junior standing in electrical or computer engineering.

**ECE 495/595. Topics in Electrical and Computer Engineering. 1-3 Credits.**

Topics in Electrical and Computer Engineering Prerequisites: departmental approval.

**ECE 496/596. Topics in Electrical and Computer Engineering. 1-3 Credits.**

Topics in Electrical and Computer Engineering Prerequisites: departmental approval.

## ECON - Economics

### ECONOMICS Courses

**ECON 200S. Basic Economics. 3 Credits.**

The course presents an overview of the major principles of micro- and macroeconomics. Topics include opportunity costs, supply and demand, competition and monopoly, national income determination, creation of money and credit, and international problems. No credit will be given to students pursuing majors in the College of Business and Public Administration.

**ECON 201S. Principles of Macroeconomics. 3 Credits.**

Development of the theory of supply and demand, and their interaction in a market economy. Classical, Keynesian, and monetarist explanations of inflation and unemployment are presented and analyzed. Emphasis is placed on income determination, fiscal policy, monetary policy, and the issue of government efforts to improve economic performance. Prerequisites: Qualifying math SAT/ACT score, qualifying score on the math placement test, or completion of MATH 102M or higher.

**ECON 202S. Principles of Microeconomics. 3 Credits.**

An examination of how individuals and businesses interact in a market economy. Emphasis is placed on consumer behavior, price and output decisions of firms, the economic efficiency of the resulting allocation of society's resources, and the gains from international trade and impact of trade barriers. Prerequisites: Qualifying math SAT/ACT score, qualifying score on the math placement test, or completion of MATH 102M or higher.

**ECON 226S. Honors: Principles of Macroeconomics. 3 Credits.**

Open only to students in the Honors College. A special honors section of ECON 201S.

**ECON 227S. Honors: Principles of Microeconomics. 3 Credits.**

Open only to students in the Honors College. A special honors section of ECON 202S.

**ECON 301. Managerial Economics. 3 Credits.**

Examines the application of economic theory and methodology to managerial decision making and strategy. Key topics are demand analysis, economic forecasting, production, cost analysis, the economics of organization, market structure and strategic behavior, pricing techniques, and government regulation and its implications for firm behavior. Emphasis is placed on the global context of managerial decisions. Prerequisites: ECON 201S and ECON 202S and BNAL 206, in addition to a declared major at the University or permission of the Dean's Office. Pre- or corequisite: MATH 200 or equivalent.

**ECON 304. Intermediate Microeconomic Theory. 3 Credits.**

Develops methods of microeconomic analysis beyond the principles level. Major emphasis is placed on consumer behavior and demand, production and cost, market organization, distribution theory, and welfare theory. Prerequisites: MATH 200 or equivalent and a graded of C or better in ECON 202S, along with a declared major in the University or permission of the Dean's Office.

**ECON 305. Intermediate Macroeconomic Theory. 3 Credits.**

Provides an overall "big picture" of the economy, focusing on the central problems of unemployment, inflation, the business cycle, and economic growth. Important issues include national income accounting, fiscal policy, monetary policy, the money supply, the money market, interest rates, saving rates, labor markets, productivity, budget surpluses/deficits, trade deficits, and exchange rates. Prerequisites: MATH 162M or equivalent, and a grade of C or better in ECON 201S and ECON 202S, along with a declared major at the University or permission of the Dean's Office.

**ECON 368. Internship. 1-3 Credits.**

Supervised internship in economics. Approval for enrollment and allowable credits is determined by the department CAP advisor and the Career Management Center in the semester prior to enrollment. Credit for internship and practicum in economics may not both be applied to meeting requirements for the major. (Qualifies as a CAP experience.) Prerequisites: ECON 304 and ECON 305, along with a declared major at the University or permission of the Dean's Office.

**ECON 369. Practicum in Economics. 3 Credits.**

Application of economic theory and principles to a practical problem of interest to a sponsoring community organization. (Qualifies as a CAP experience.) Prerequisites: ECON 304 and ECON 305; BNAL 206 and BNAL 306, along with a declared major at the University or permission of the Dean's Office.

**ECON 395. Topics in Economics. 1-3 Credits.**

A study of selected topics, the title of which will appear in the course schedule. Prerequisites: ECON 200S and ECON 201S or ECON 202S, along with a declared major at the University or permission of the Dean's Office.

**ECON 396. Topics in Economics. 1-3 Credits.**

A study of selected topics, the title of which will appear in the course schedule. Prerequisites: ECON 200S and ECON 201S or ECON 202S, along with a declared major at the University or permission of the Dean's Office.

**ECON 400. Research Methods in Economics. 3 Credits.**

Provides students with a set of practical skills useful in economic research and in the presentation of research results. Includes training in the use of various software packages, the Internet, and regression analysis for conducting economic research. Prerequisites: ECON 201S, ECON 202S, BNAL 206, and BNAL 306, along with a declared major at the University or permission of the Dean's Office.

**ECON 402/502. Transportation Economics. 3 Credits.**

A survey of the transportation system in the United States including its development, pricing, and regulation. Special attention is given to railroads, highways, pipeline, water and air transportation; and the roles that these modes of transportation play in economic development. Prerequisites: ECON 202S (or ECON 200S and permission of the instructor) along with a declared major at the University or permission of the Dean's Office.

**ECON 407W/507. Labor Market Economics. 3 Credits.**

Economic analysis of various facets of labor markets. Emphasis is placed on the analysis of labor supply, labor demand, wage determination, earnings differentials and inequality, occupational choice, human capital investment, labor market discrimination, mobility and immigration, impact of unions, and unemployment. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, ECON 202S (or ECON 200S and permission of the instructor), along with a declared major at the University or permission of the Dean's Office.

**ECON 421/521. Public Economics. 3 Credits.**

This course examines the interaction between government and the economy, with particular emphasis on the role of the federal government. Topics that address the motivation for government involvement in the economy include market failure, income inequality, and redistribution of income. Specific programs studied include Medicare/Medicaid, welfare programs, and the social security system. Prerequisites: ECON 201S and ECON 202S, along with a declared major at the University or permission of the Dean's Office.

**ECON 425/525. Introduction to Mathematical Economics. 3 Credits.**

The course focus is on the use of differential and integral calculus, matrix algebra, difference equations and classical optimization theory in the presentation and development of economic theory. Prerequisites: ECON 201S, ECON 202S, and MATH 200 or equivalent, along with a declared major at the University or permission of the Dean's Office.

**ECON 427/527. Industrial Organization and Public Policy. 3 Credits.**

A study of market structures and the conduct and performance of business firms in different market structures. The emphasis is on the theory and measurement of industrial concentration and public policy responses to industrial concentration. Prerequisites: MATH 200 or equivalent and ECON 202S (or ECON 200S and permission of the instructor), along with a declared major at the University or permission of the Dean's Office.

**ECON 431/531. Money and Banking. 3 Credits.**

Examines the nature and functions of money and credit, the commercial banking system, the Federal Reserve System, the quantity theory of money, the theory of income determination, the balance of payments and exchange rates, and the history of monetary policy in the United States. Prerequisites: ECON 201S and ECON 202S, along with a declared major at the University or permission of the Dean's Office.

**ECON 435/535. Health Economics: A Global Perspective. 3 Credits.**

This course introduces the student to the economics of health care and the application of health economics to health care problems, the issues surrounding those problems, and the potential solutions to those problems. The course will emphasize institutional features of the health care industry, the market for health care, the political economy of health care, and government involvement in the delivery of health care. Further, the course will survey the delivery of health care in other countries and provide a global perspective on selected health care issues such as AIDS, water and air quality, and the aging of the population. Prerequisites: ECON 202S and a declared major at the University or permission of the Dean's Office.

**ECON 436. Sports Economics. 3 Credits.**

This course introduces the student to the economics of sports in America. The course will emphasize institutional features of the sport industry. Specific topics included are: sports franchises as profit-maximizing firms; monopoly and antitrust rules as applied to the sports industry; public finance of sports; costs and benefits of a sports franchise to a city; the labor economics of professional sports; discrimination in sports; and the economics of college sports. This course may not be applied toward the major in economics as an economics elective or toward the minor in economics or the M.A. in economics. (It could, however, be used as a non-economics elective for the major.) Prerequisites: ECON 202S or equivalent and a declared major at the University or permission of the Dean's Office.

**ECON 444/544. Development of the American Economy. 3 Credits.**

A study of the economic development of the United States from colonial times to the present. An analytical course concerned with the application of economic theory in the study of the growth and development of the American economy. Prerequisites: ECON 201S and ECON 202S, along with a declared major at the University or permission of the Dean's Office.

**ECON 445W/545. Urban Economics. 3 Credits.**

An analysis of the economic factors which give rise to the formation of urban centers and which contribute to the following problems: urban poverty, housing conditions, traffic congestion, and the fiscal crisis faced by modern cities. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, ECON 202S (or ECON 200S and permission of the instructor), and a declared major at the University or permission of the Dean's Office.

**ECON 447W/547. Natural Resource and Environmental Economics. 3 Credits.**

Topics discussed include conservation and scarcity, market failure, fishery management, benefit-cost analysis, water resource development, environmental quality, recreation, energy, and marine resources. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; ECON 202S (or ECON 200S and permission of the instructor), and a declared major at the University or permission of the Dean's Office.

**ECON 450. International Economics. 3 Credits.**

An analysis of the principles of trade theory and policy with an overall exposition of the principles of international finance. The main objective of the course is to provide knowledge of analytical tools used by economists in analyzing contemporary international economic problems. Prerequisites: ECON 201S and ECON 202S, along with a declared major at the University or permission of the Dean's Office.

**ECON 451/551. History of Economic Thought. 3 Credits.**

A study of the history of economic theory with attention to the economic ideas and philosophy of Adam Smith, David Ricardo, Karl Marx, J.M. Keynes and other major figures in the development of economics. Prerequisites: ECON 201S (or ECON 200S) and ECON 202S, along with a declared major at the university or permission of the Dean's Office.

**ECON 454W/554. Economic Development. 3 Credits.**

This course is intended to provide an introduction to the problems of economic development in the Third World, including the problems of economic growth, income distribution, poverty, urbanization, uneven development, agricultural policy, economic planning, industrial policy, trade policy, balance of payments, finance, and currency crises. To illustrate these issues we will examine the problems of certain individual countries, such as Brazil, Korea, Philippines, India, Mexico, Kenya, Indonesia, and Thailand. The course tries to strike a balance between economic theory and institutional economics. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; ECON 201S and ECON 202S; junior standing or permission of the chief departmental advisor; and a declared major at the university or permission of the Dean's Office.

**ECON 455/555. Comparative Economic Systems. 3 Credits.**

This course examines and compares different economies from around the world, including such economies as the UK, France, Germany, Sweden, Japan, India, Korea, Russia, and China. Students look at the economic growth, GDP per capita, unemployment, inflation, income distribution, economic efficiency, institutions, policies, industrial structure, legal infrastructure, and international trade of these economies. Students study the functioning of markets and the problems of market and government failure. The course addresses the question, what is the best way to organize society. Prerequisites: ECON 201S, ECON 202S and a declared major at the university or permission of the Dean's Office.

**ECON 456/556. Economics of Information, the Internet and E-Commerce. 3 Credits.**

Outlines the economic principles of information that underpin the Internet and e-commerce. Considers auctions, economies of scale and scope, data mining, price discrimination, product bundling, versioning, networking, the diffusion of innovations and intellectual property as they are utilized on the Internet and in e-commerce. Taught in a microcomputer laboratory. Prerequisites: ECON 201S, ECON 202S and a declared major at the university or permission of the Dean's Office.

**ECON 494. Federal Reserve Policy. 3 Credits.**

The course covers in detail the process of monetary policymaking under varying economic conditions. Students research and analyze current and near-term economic conditions with a focus on forming a prediction regarding the future path of monetary policy. The course culminates with selected students' participation in the annual Federal Reserve Challenge competition. Prerequisites: ECON 305, ECON 431, permission of the instructor, and a declared major at the university or permission of the Dean's Office.

**ECON 495/595. Selected Topics in Economics. 1-3 Credits.**

Taught on an occasional basis. A study of selected topics, the title of which will appear in the course schedule. Prerequisites: ECON 201S, ECON 202S, permission of instructor, and a declared major at the University or permission of the Dean's Office.

**ECON 499. Readings in Economics. 3 Credits.**

Designed to provide the advanced student in economics an opportunity to do independent study under the guidance of a member of the faculty. Prerequisites: ECON 201S, ECON 202S, ECON 304, ECON 305, senior standing, a declared major in Economics, and permission of the Chief Departmental Advisor.

## EET - Electrical Engineering Technology

### ELECTRICAL ENGINEERING TECHNOLOGY Courses

**EET 110. Electrical Circuits I. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MATH 162M. Fundamentals of electrical circuits including basic electrical parameters and variables, circuit laws and theorems, mesh analysis, node analysis, Thevenin's and Norton's Theorems, capacitance, inductance, magnetism, and elementary RC and RL transients.

**EET 120. Logic Circuits and Microprocessors. 3 Credits.**

Lecture 3 hours; 3 credits. An introduction to logic circuits, Boolean algebra, digital interface devices, combinational and sequential logic design, and microprocessor fundamentals. (Offered Fall.)

**EET 125. Logic And Microprocessor Laboratory. 2 Credits.**

Lecture 1 hour; laboratory 2 hours; 2 credits. Pre-or corequisite: EET 120. Team-oriented experiments in basic combinational and sequential logic circuits and an introduction to fundamental microprocessors. (offered fall).

**EET 195. Topics. 1-3 Credits.**

Study of selected topics.

**EET 200. Electrical Circuits II. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: MATH 163 and a grade of C or better in EET 110. A continuation of EET 110 with emphasis on steady-state ac circuit analysis and applications. Topics include alternating current and voltage, phasors and complex numbers and their applications in circuit analysis, series and parallel resonance, complex power, and polyphase circuits. (offered fall).

**EET 205. Circuits Laboratory. 2 Credits.**

Lecture 1 hour; laboratory 3 hours; 2 credits. Pre- or corequisite: EET 200. Electrical laboratory instruction including test equipment, measurements, data analysis, verification of circuit laws, formal report preparation, and circuit construction.

**EET 210. Electronic Devices and Circuits I. 3 Credits.**

Semiconductor properties and semiconductor devices including diodes, MOS field-effect transistors, junction field-effect transistors and bipolar junction transistors. The ideal operational amplifier and its applications. FET and BJT biasing, including constant current biasing, and amplifier circuits with emphasis on dc modeling and graphical analysis. Multisim simulation of circuit biasing. Prerequisites: EET 110.

**EET 220. Electronic Devices and Circuits II. 3 Credits.**

A continuation of EET 210. Small-signal analysis of transistor circuits emphasizing the hybrid- $\pi$  equivalent circuit. Analysis of high frequency effects in FETs and BJTs and their effect on frequency response. Waveform generating and waveform modification circuits. High power devices and their applications, including power supplies and power amplifiers. Multisim simulation of circuit gain and frequency response. Prerequisites: EET 200 and EET 210.

**EET 225. Electronics Laboratory. 2 Credits.**

Lecture 1 hour; laboratory 3 hours; 2 credits. Prerequisite: EET 205. Pre- or corequisite: EET 220. Practical design, construction, testing and troubleshooting of electronic circuits including single state and multistage amplifiers, power amplifiers, linear integrated circuits, and control devices.

**EET 295. Topics. 1-3 Credits.**

Study of selected topics.

**EET 300. Advanced Circuit Analysis. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: MATH 211 and a grade of C or better in EET 200. General analysis of linear networks using classical methods, Laplace transforms and computer-aided methods. Topics include single element transients, first- and second-order circuits, transfer function analysis, and phasor analysis, Bode plots and waveform analysis. Circuit analysis software is used to support the analytical methods.

**EET 305. Advanced Technical Analysis. 3 Credits.**

Analytical and computational methods to support upper-division engineering technology courses. Topics include linear algebra, ordinary differential equations of engineering systems, elements of vector analysis, introductory statistical concepts, and software usage/development. MATLAB is used throughout the course to support all the topics. Prerequisites: a grade of C or better in MATH 211.

**EET 310. Digital Electronics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: EET 120, 125, 205, and 210. First course in an upper division sequence in digital electronics circuits and systems. Topics include a comprehensive treatment of Boolean algebra, computer arithmetic, and applications of digital integrated circuits.

**EET 312. Wireless Communications I. 4 Credits.**

Overview of communications systems including both time and frequency domain analysis. Topics include spectrum analysis, analog modulation methods, digital modulation methods, receiver design, and cellular technology. Virtual laboratory projects utilizing simulation software. Prerequisites: EET 300 and EET 305.

**EET 315. Digital Electronics Laboratory. 2 Credits.**

Lecture 1 hour; laboratory 3 hours; 2 credits. Pre- or corequisite: EET 310. Application oriented experiments and design problems in digital electronics. Prototype construction using wire-wrap methods will also be covered. Formal written reports will be required.

**EET 320. Microprocessors and Microcontrollers. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: EET 310. Second lecture course in the upper-division digital electronics sequence. Software/hardware design of microprocessors and microcontrollers, interface circuitry, and system designs. Organization, architecture, software programming, simulation, peripheral interface designs, communication protocols, and the application of microprocessor-based systems design.

**EET 325. Microprocessor Laboratory. 2 Credits.**

Lecture 1 hour; laboratory 3 hours; 2 credits. Pre- or corequisite: EET 320. Hands-on implementation of microprocessor and microcontroller systems and peripheral interfacing experiments. Emphasis is placed on the hardware and software design and firmware construction in embedded system applications.

**EET 330. Linear Electronics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: EET 220 and 300. General treatment of linear electronic circuits with emphasis on the operational amplifier and integrated circuits derived from it. Topics include various amplifier circuits and converters, integrators and differentiators, comparators, waveform generators, active filters, A/D and D/A converters, and regulators. Design of circuits to meet specifications. Circuit analysis software is used to validate some of the designs.

**EET 335. Linear Electronics Laboratory. 2 Credits.**

Lecture 1 hour; laboratory 3 hours; 2 credits. Pre- or corequisite: EET 330. Design testing, and evaluation of "linear" electronic circuits and subsystems with primary emphasis on circuit components and modules. Measurement techniques, instrumentation and error analysis. Simulation of circuit designs using Multisim including transient response and frequency response.

**EET 340. Transmission Networks. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: EET 300. Transmission line theory including both transients and steady-state conditions. Smith chart and its application to RF design. Introduction to electric and magnetic fields and plane wave propagation. Circuit analysis software is used to support the analytical methods.

**EET 350. Fundamentals of Electrical Technology. 3 Credits.**

Lecture 3 hours; 3 credits. Pre- or corequisite: MATH 211. A comprehensive course in electrical engineering technology for nonmajors. Major topics are basic electricity (AC and DC), circuit analysis, linear electronics and digital electronics. Not open to electrical engineering technology majors except as a substitute for EET 110 in special cases.

**EET 355. Electrical Laboratory. 1 Credit.**

Laboratory 2 hours; 1 credit. Pre- or corequisite: EET 350. Selected electrical laboratory topics for nonmajors including basic measurements, instrumentation, operational amplifiers, digital circuits, and rotating machines. Not open to electrical engineering technology majors.

**EET 360. Electrical Power and Machinery. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: EET 200 or EET 350. A study of synchronous and asynchronous AC machinery, DC machinery, power distribution systems, and instrumentation.

**EET 365W. Electrical Power and Machinery Laboratory. 2 Credits.**

Lecture 1 hour; laboratory 2 hours; 2 credits. Prerequisites: A grade of C or better in ENGL 211C or 221C or 231C; EET 205 or 355; Pre- or corequisite: EET 360. A laboratory course dealing with electrical power and machinery as covered in EET 360. Formal written reports will be required. (This is a writing intensive course.)

**EET 367. Cooperative Education. 1-3 Credits.**

1-3 credits (may be repeated for credit). Prerequisite: approval by the department and Career Management in accordance with the policy for granting credit for Cooperative Education programs. Available for pass/fail grading only. Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place. (qualifies as a CAP experience).

**EET 368. Internship. 1-3 Credits.**

1-3 credits. Prerequisite: approval by department and Career Management. Available for pass/fail grading only. Academic requirements will be established by the department and will vary with the amount of credit desired. Allows students to gain short duration career-related experience. (qualifies as a CAP experience).

**EET 369. Practicum. 1-3 Credits.**

1-3 credits. Prerequisite: approval by department and Career Management. Available for pass/fail grading only. (qualifies as a CAP experience).

**EET 370T. Energy and the Environment. 3 Credits.**

Lecture 3 hours, 3 credits. Prerequisite: PHYS 101N or PHYS 111N or PHYS 226N or PHYS 231N. A study of existing and new energy production methods, energy as a purchased/traded commodity, physics of energy, positive and negative implications for the environment, economics of energy alternatives, and resulting human/social impacts.

**EET 395. Topics. 1-3 Credits.**

Study of selected topics. Prerequisite: junior standing.

**EET 396. Topics. 1-3 Credits.**

Study of selected topics. Prerequisite: junior standing.



**EET 400. CAD Electronics. 3 Credits.**

Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisites: EET 310, 320, 325. An upper-division study of the fundamentals of electronic schematic capture, circuit simulation, and printed circuit board design using microcomputers. Schematic symbols, simulation models, and pcb modules are developed by the students.

**EET 405. Introduction to Local Area Networks. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: EET 320 and 325. Design, installation, and management of PC based local area networks. Topics include network topology (Ethernet, token ring, FDDI, etc.), network interface card installation and configuration, client/server hardware, LAN/WAN concepts, bridges and routers, and software controls.

**EET 410. Communication Principles. 3 Credits.**

Lecture 3 hours, 3 credits. Prerequisite: EET 300 or 350. Fourier series and transforms, spectral analysis, signal transmission, analog modulation and detection methods, sampling theorem, pulse and digital modulation methods, and time-division and frequency-division multiplexing.

**EET 412. Wireless Communications II. 3 Credits.**

A continuation of EET 312. Topics include digital encoding techniques, signal-to-noise comparisons of different analog and digital modulation methods, link analysis, and satellite communication. System level simulations for determining subsystem design requirements and overall performance. Prerequisites: EET 312.

**EET 415. Programmable Machine Controls. 3 Credits.**

Lecture 2 hours; laboratory 2 hours; 3 credits. Pre- or corequisite: EET 310, or prerequisite: EET 350. Application oriented experiments and design problems in programmable controller setup and programming techniques with emphasis on practical applications. Computer assignments include ladder programs simulation.

**EET 420. Advanced Logic Design. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: EET 310. Advanced digital logic design and circuit reduction. Topics include lattice structure, symmetry recognition and simplification, threshold logic, design-for-testing techniques, shortest path test planning, adaptive testing, and fuzzy logic. Computer assignments include design simulation and testing.

**EET 430. Automatic Control Systems. 3 Credits.**

Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisites: EET 305, 330, 360, 365W. A study of modern control devices and applications including electrical, mechanical and pneumatic types.

**EET 434. Introduction to Senior Project. 1 Credit.**

Lecture 1 hour; 1 credit. Prerequisite: senior standing. This course must be taken in the semester prior to the Senior Project course. A collection of career-related topics pertaining to engineering technology. Topics include engineering codes and standards, engineering ethics, technical report writing, job search and resume writing techniques, patents and property rights, and professional engineering licensure. The course concludes with the selection of the student's project topic for the subsequent Senior Project course.

**EET 440. High Frequency and Microwave Technology. 3 Credits.**

Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: EET 340. Methods for generating, transmitting, and detecting signals in the VHF, UHF, and microwave frequency ranges. Laboratory will emphasize high frequency and microwave measurements including bridges, slotted lines, spectrum analyzers and reflectometers.

**EET 450. Digital Control Systems. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: EET 305, 320, 325, 330. A study of modern digital control systems including the sampling process of linear systems, modeling of discrete systems, z-transforms, analysis of discrete systems, signal conversion, the digital computer as controller, feedback and cascade compensation, and hardware and software for digital control systems.

**EET 460. Modern Communication Systems. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: EET 410. Overview of the principles of satellite communications, television systems, fiber optics, antennas and other relevant topics.

**EET 470. Microprocessor Based Design. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: EET 310, 320, and 325. High level and low level programming languages that relate to advanced microprocessor/microcontroller embedded system designs. The low level assembly language in embedded systems, and high level C and C++ languages in a PC that are used in real time controls and communications are the focus of this course. Topics include the related hardware/software interfacing built between different devices such as memories, ADCs, and display modules; mathematic utilities routines development; wireless RF modules; communication in serial and parallel formats; and communications protocols.

**EET 480W. Senior Project. 3 Credits.**

Lecture 1 hour; laboratory 6 hours; 3 credits. Prerequisites: EET 434, senior standing and faculty approval; grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C. Individual projects performed under the direction of a sponsoring faculty member. Projects may involve analytical and/or experimental results. Formal written reports will be required. (qualifies as a CAP experience) (This is a writing intensive course.).

**EET 485. Electrical Power Systems. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: EET 360. Fundamentals of electrical power transmission and distribution systems. Transformer operation/application, balanced/unbalanced loads, power factor correction, per-unit system system applications, fault calculations, power quality, over-current protection, relay construction/application, lighting system design, grounding, and introduction to the National Electric Code.

**EET 490. Computer-Aided Circuit Simulation. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: EET 300, 330, 335, and 340. Advanced treatment of computer-aided analysis software such as Multisim and MATLAB and the applications to electronic circuit analysis and design. Topics include non-linear models, distortion analysis, spectral analysis, and Monte Carlo techniques.

**EET 495. Topics in Electrical Engineering Technology. 1-3 Credits.**

Study of selected topics. Prerequisite: junior standing.

**EET 496. Topics in Electrical Engineering Technology. 1-3 Credits.**

Study of selected topics. Prerequisite: junior standing.

## ELS - Educational Leadership and Services

### EDUCATIONAL LEADERSHIP AND SERVICES Courses

**ELS 496/596. Topics in Education. 1-3 Credits.****ELS 497/597. Topics in Education. 1-3 Credits.**

The College of Education offers selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. Prerequisite: permission of the instructor.

**ELS 498/598. Topics in Education. 1-3 Credits.**

The College of Education offers selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. Prerequisite: permission of the instructor.

## ENGL - English

### ENGLISH Courses

**ENGL 110C. English Composition. 3 Credits.**

The principal objective of the course is to prepare students to be effective writers of the kinds of compositions they will be called on to produce during their college careers. By the end of the course, students should be more mature in their understanding and use of language, should develop efficient writing processes, and should know and demonstrate the qualities of effective composition in a given rhetorical situation. Prerequisites: A passing grade on the Writing Sample Placement Test.

**ENGL 112L. Introduction to Literature. 3 Credits.**

This course shows the general student how to understand the distinctive forms and meanings of poems, plays, short stories and fiction, and key notions such as character, plot, and imagery. Through critical reading, analysis, class and small group discussions, formal essays and examinations, students will develop an understanding of the effective use of the English language and its contribution to our cultural heritage. Works include women and minority writers.

**ENGL 114L. American Writers, American Experiences. 3 Credits.**

This course introduces the student to the diversity of American culture as depicted in American literature. Works include minority and women writers and provide visions of city, frontier and regional life; ethnic and racial immigrant experiences; religion, democracy, and capitalism. A student with credit for ENGL 144L cannot receive credit for ENGL 114L.

**ENGL 126C. Honors: English Composition. 3 Credits.**

Special honors sections of ENGL 110C. Prerequisites: A passing score on the Writing Sample Placement Test.

**ENGL 127L. Honors: Introduction to Literature. 3 Credits.**

Open only to students in the Honors College. A special honors section of ENGL 112L.

**ENGL 200. Introduction to English Studies. 1 Credit.**

A preview of the subject areas of an English major (literature, linguistics, creative writing, journalism, professional writing, rhetoric, teaching) with attention to the student's curricular and career planning. Required of English majors. Open to anyone interested in English.

**ENGL 211C. English Composition. 3 Credits.**

This course emphasizes critical reading, thinking, and writing. Students are introduced to principles of analysis and argumentation and taught the requisite skills that will allow them properly to paraphrase, summarize, and synthesize research in the common modes of academic writing. The course culminates in the preparation of a fully-documented research paper. A student with credit for ENGL 111C cannot receive credit for ENGL 211C. Prerequisites: ENGL 110C with a grade of C or higher.

**ENGL 221C. Introduction to Writing in Business, Education and Social Sciences. 3 Credits.**

This course emphasizes critical reading, thinking, and writing as they apply to business, education, and the social sciences. Students are introduced to principles of analysis and argumentation and taught the requisite skills that will allow them to properly paraphrase, summarize, and synthesize research as it applies to and is most commonly found in business, education, and the social sciences. The course culminates in the preparation of a fully-documented research paper. Prerequisites: ENGL 110C.

**ENGL 231C. Introduction to Technical Writing. 3 Credits.**

This course emphasizes critical reading, thinking, and writing as they apply to the technical and scientific disciplines. Students are introduced to principles of analysis and argumentation and taught the requisite skills that will allow them properly to paraphrase, summarize, and synthesize research as it applies to and is most commonly found in the technical and scientific communities. The course culminates in the preparation of a fully-documented research paper. A student with credit for ENGL 131C cannot receive credit for ENGL 231C. Prerequisites: ENGL 110C.

**ENGL 300. Introduction to Creative Writing. 3 Credits.**

A creative writing workshop course combining individual conferences with the instructor and class discussion of student writing. Students will work in fiction, non-fiction, poetry, and drama. Prerequisites: A grade of C or better in ENGL 110C and ENGL 211C and a passing score on the Writing Sample Placement Test.

**ENGL 301. Introduction to British Literature I. 3 Credits.**

A survey of British literature from the beginning of textual records until 1780, focusing on the development of different literary forms in their social and cultural contexts. Prerequisites: Passing score on the Writing Sample Placement Test, literature way of knowing requirement, and 6-hour General Education composition requirement or permission of the instructor.

**ENGL 302. Introduction to British Literature II. 3 Credits.**

A survey of British literature after 1780, focusing on the development of different literary forms in their social and cultural contexts. Prerequisites: Passing score on the Writing Sample Placement Test, literature way of knowing requirement and 6-hour General Education composition requirement or permission of the instructor.

**ENGL 303. Shakespeare's Histories and Comedies. 3 Credits.**

An exploration of Shakespearean comedy and historical drama, through plays such as, *A Midsummer Night's Dream*, *The Merchant of Venice*, *As You Like It*, *Measure for Measure*, and *The Tempest* for the former; *Richard II*, *Henry IV*, and *Richard III* for the latter. Prerequisites: Passing score on the Writing Sample Placement Test, literature way of knowing requirement, 6-hour General Education composition requirement, and three additional hours in literature or permission of instructor.

**ENGL 304. Shakespeare's Tragedies and Poetry. 3 Credits.**

A study of Shakespearean poetry and tragedy through the longer poems and the sonnets for the former, and through plays such as *Romeo and Juliet*, *Hamlet*, *Othello*, *Macbeth*, and *Antony and Cleopatra* for the latter. Prerequisites: Passing score on the Writing Sample Placement Test, literature way of knowing requirement, 6-hour General Education composition requirement, and three additional hours in literature or permission of instructor.

**ENGL 307T. Digital Writing. 3 Credits.**

This course introduces students to issues of writing in various digital environments like web pages, email, blogs, wikis, and discussion boards. It also introduces fundamentals of hypertext authoring, digital and visual rhetoric, and image manipulation. Prerequisites: ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C.

**ENGL 312. The Film. 3 Credits.**

A multimedia course using slides, video cassettes, and 16mm films to increase appreciation of film as an art form, particularly as a narrative medium. Attention is given to all the elements of filmmaking (including directing, acting, writing, editing, visual composition, and music), especially as they contribute to the way films tell stories. After students become familiar with film techniques, they study eight to ten films for their narrative methods. Prerequisites: Passing score on the Writing Sample Placement Test and three semester hours in English.

**ENGL 325. Introduction to Rhetorical Studies. 3 Credits.**

Explores the nature and function of rhetoric and its contribution to the knowledge-making enterprises of English studies and other disciplines. Students will use that 'lens' to assess the effectiveness of their own language practices. Prerequisites: Passing score on the Writing Sample Placement Test and 6-hour General Education composition requirement.

**ENGL 327W. Advanced Composition. 3 Credits.**

This course emphasizes development of a mature, professional style in expository writing by study of the stylistic and analytical principles underlying effective prose writing. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 110C and a grade of C or better in one of the following: ENGL 211C, ENGL 221C, or ENGL 231C.

**ENGL 333. Introduction to Critical Theory. 3 Credits.**

This course introduces students to theories about the nature and value of literature and gives them experience in applying such theories to specific literary texts. Prerequisites: Passing score on Writing Sample Placement Test and three hours of literature or permission of the instructor.

**ENGL 334W. Technical Writing. 3 Credits.**

This course provides the student with a working knowledge of various types of technical communication, including the writing of proposals, instructions, and reports for both the specialist and the nonspecialist. (This is a writing intensive course.) Prerequisites: Passing score on the Writing Sample Placement Test and a grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C.

**ENGL 335. Editing and Document Design. 3 Credits.**

This course provides practical experience in copy editing and includes an analysis of technical formats used in journalism, business, industry, and government. It features hands-on lab work in document presentation, page layout, and design. Prerequisites: Passing score on the Writing Sample Placement Test and six hours in English to include ENGL 334W or ENGL 380.

**ENGL 336. The Short Story. 3 Credits.**

A genre course on the art of the short story. Students will explore how the writers' careful selection of detail creates meanings that emerge through the characters, plot, setting, diction, point of view, and other elements of fiction. Prerequisites: Passing score on the Writing Sample Placement Test, literature way of knowing requirement and 6-hour General Education composition requirement or permission of the instructor.

**ENGL 340. American Drama. 3 Credits.**

A study of American drama from its beginnings to the present day. The course includes plays from the eighteenth and nineteenth centuries, with a generous selection from the twentieth and twenty-first centuries. Prerequisites: Passing score on the Writing Sample Placement Test, literature way of knowing requirement and 6-hour General Education composition requirement or permission of instructor.

**ENGL 342. Southern Literature. 3 Credits.**

A survey of the literature of the American South from William Byrd to Ernest Gaines. Selected writings are studied not only for their literary value but also as expressions of evolving regional attitudes to be evaluated in terms of the mainstream of American culture. Prerequisites: Passing score on the Writing Sample Placement Test, literature way of knowing requirement and 6-hour General Education composition requirement or permission of the instructor.

**ENGL 345. American Literature to 1860. 3 Credits.**

The course presents a survey of American literature from the beginning to the Civil War. Among the authors studied are Franklin, Bryant, Poe, Hawthorne, Emerson, Thoreau, and Melville. Prerequisites: Passing score on the Writing Sample Placement Test, literature way of knowing requirement and 6-hour General Education composition requirement or permission of instructor.

**ENGL 346. American Literature Since 1860. 3 Credits.**

The course focuses upon major movements and writers. Among the authors studied are Whitman, Twain, James, and Frost. Prerequisites: Passing score on the Writing Sample Placement Test, literature way of knowing requirement and 6-hour General Education composition requirement or permission of instructor.

**ENGL 349. The Contemporary American Novel. 3 Credits.**

Reading and analysis of American novels published since 1945. Emphasis on contemporary themes and techniques. Prerequisites: Passing score on the Writing Sample Placement Test, literature way of knowing requirement and 6-hour General Education composition requirement or permission of the instructor.

**ENGL 350. Aspects of the English Language. 3 Credits.**

An introduction to the grammar of mainstream English. Primary focus is on analyzing English sentences, including study of parts of speech, phrases, clauses, and sentence types. Prerequisites: Passing score on the Writing Sample Placement Test and junior standing or permission of the instructor.

**ENGL 351. Fiction Workshop. 3 Credits.**

Students write, criticize, discuss, and revise works of fiction. Prerequisites: Passing score on the Writing Sample Placement Test; ENGL 300 and junior standing or permission of the instructor, based on writing samples submitted.

**ENGL 352. Poetry Workshop. 3 Credits.**

Students write, criticize, discuss, and revise poetry. Prerequisites: Passing score on the Writing Sample Placement Test; ENGL 300; and junior standing or permission of the instructor, based on writing samples submitted.

**ENGL 354. Client-Based Research Writing. 3 Credits.**

This is a client-based research course that aims to provide students with workplace research experience. The primary objective is to teach students the rhetorical nature of conducting and reporting research in professional contexts for multiple audiences. Research methods such as surveys, interviews, and observations will be covered. Prerequisites: ENGL 110C and ENGL 211C.

**ENGL 360. World Masterpieces I. 3 Credits.**

An introduction to selected major works in translation from the beginnings of world literature through the early seventeenth century. Works will be chosen that illustrate the relationship of literature to cultural tradition in different global regions. Prerequisites: Passing score on the Writing Sample Placement Test, literature way of knowing requirement, 6-hour General Education composition requirement, and three additional hours in literature or permission of instructor.

**ENGL 363. World Masterpieces II. 3 Credits.**

An introduction to selected major works of literature in translation from the seventeenth century to the present day. Works from a variety of world cultures will be used to explore the interaction between literature and society in centuries of expanding global awareness. Prerequisites: Passing score on the Writing Sample Placement Test, literature way of knowing requirement, 6-hour General Education composition requirement, and three additional hours in literature or permission of instructor.

**ENGL 366. Public Journalism in the Digital Age. 3 Credits.**

This course exposes students to conventional and alternative approaches to reporting in public journalism. Students use a combination of conventional and alternative approaches as they research, interview and construct a story on a local community issue or concern. Prerequisites: ENGL 110C and ENGL 211C; ENGL 380 or ENGL 382 or COMM 260 or permission of the instructor.

**ENGL 367. Cooperative Education. 1-3 Credits.**

Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and the Cooperative Education program prior to the semester in which the work experience is to take place. (Qualifies as a CAP experience.) Prerequisites: Passing score on the Writing Sample Placement Test and approval of the department and Career Management.

**ENGL 368. Writing Internship. 1-3 Credits.**

A structured work experience involving writing and/or editing. A paper, a portfolio of work done, and satisfactory evaluations by supervisor and cooperating faculty member are required. No more than two English internships (chosen among 368, 369, 468, or cooperative education courses of similar content) may be counted towards a degree. (Qualifies as a CAP experience.) Prerequisites: Passing score on the Writing Sample Placement Test and 15 hours in English, with ENGL 327W or ENGL 334W recommended; permission of departmental internship coordinator.

**ENGL 369. Research Practicum. 3 Credits.**

This course enables students to combine traditional research in scholarship with real world applications. Can be repeated for credit. (Qualifies as a CAP experience.) Prerequisites: Passing score on the Writing Sample Placement Test, ENGL 327W or ENGL 335, plus 15 hours in the major (with sufficient coursework in an involved emphasis) and approval by faculty practicum advisor.

**ENGL 370. English Linguistics. 3 Credits.**

A survey of topics in English linguistics. Topics include the sound system, the structure of words, the ways in which words and phrases form meaningful utterances, the structure of conversations, differences between spoken and written English, language acquisition by children, language variation, and language in its social context. Prerequisites: Passing score on the Writing Sample Placement Test and junior standing or permission of the instructor.

**ENGL 371W. Communication Across Cultures. 3 Credits.**

An interdisciplinary examination of intercultural communication through film and readings in anthropology, linguistics, and world literature, this course will compare the values, beliefs, social structures and conventions of a number of cultures to those of the U.S. This course is part of the World Cultures interdisciplinary minor. (This is a writing intensive course.) Prerequisites: Passing score on the Writing Sample Placement Test, a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, or permission of the instructor.

**ENGL 380. Reporting and News Writing I. 3 Credits.**

This class focuses on media literacy and on the role of media in society. Students learn and practice elements of news writing, including writing leads, organizing stories, reporting techniques, and interviewing. Story assignments come from handouts, press releases, press conferences, speeches, and public meetings. Some assignments are completed under simulated deadline pressure in the computer lab. Prerequisites: Passing score on the Writing Sample Placement Test and six semester hours in English.

**ENGL 381. Public Relations. 3 Credits.**

This course is designed to introduce the student to certain disciplines related to the public relations process. The emphasis is equally distributed between the handling of written materials and the dynamics of group relations, i.e., the publicist and the person or persons whom he or she is representing. The focus is distinguished from advertising by virtue of its emphasis upon public service, particularly the continued need for the free flow of information in the democratic process. Prerequisites: Passing score on the Writing Sample Placement Test and six semester hours in English.

**ENGL 382. Reporting News for Television and Digital Media. 3 Credits.**

This course focuses on writing for television news and producing online news reports. Students strengthen their journalistic skills and learn the importance of writing clearly for a viewing audience while working under newsroom deadlines. By the end of the course, students should feel confident in producing accurate, detailed reports for both television news and online news sites. Prerequisites: A grade of C or better in ENGL 110C and ENGL 211C.

**ENGL 395. Topics in English. 1-3 Credits.**

A study of selected topics designed for nonmajors or for elective credit within a major. These courses will appear in the course schedule and will be more fully described in information distributed to academic advisors. Prerequisites: Passing score on the Writing Sample Placement Test and three semester hours in literature.

**ENGL 396. Topics in English. 1-3 Credits.**

A study of selected topics designed for nonmajors or for elective credit within a major. These courses will appear in the course schedule and will be more fully described in information distributed to academic advisors. Prerequisites: Passing score on the Writing Sample Placement Test and three semester hours in literature.

**ENGL 403/503. Medieval Literature. 3 Credits.**

An introduction to representative works of English literature (some in translation) from Beowulf through Chaucer's Canterbury Tales, The Book of Margery Kempe, The Second Shepherd's Play, and Malory's Morte d'Arthur. Students will discover how medieval literature has contributed to and continues to complicate modern conceptions of reading, writing, and aesthetics. Prerequisites: Passing score on the Writing Sample Placement Test and one 300-level literature course or permission of instructor.

**ENGL 406/506. The Teaching of Literature. 3 Credits.**

This course is designed to provide an intensive examination of issues, approaches, and methods utilized in the teaching of literature, particularly literature written for children and young adults. Prerequisites: One 300-level literature course or permission of the instructor.

**ENGL 407/507. Chaucer's Canterbury Tales. 3 Credits.**

A study of The Canterbury Tales with an introduction to Middle English language and culture. Prerequisites: Passing score on the Writing Sample Placement Test and three semester hours in literature.

**ENGL 414/514. Motherhood: Texts and Images. 3 Credits.**

This course examines the role of the mother, the experience of mothering and the institution of motherhood through a number of disciplinary and theoretical lenses. It considers how motherhood functions to women's advantage or disadvantage, in professional and economic areas as well as the mother's ideological construction in public discourse, imagery, nonfiction, and film. Prerequisites: ENGL 211C or equivalent.

**ENGL 416/516. English Renaissance Drama. 3 Credits.**

An extensive survey of the secular national dramas of Renaissance England that were written and performed by Shakespeare's contemporaries in London between 1576 and 1642. Students study the literary features, social contexts and ideological underpinning of representative works by Kyd, Marlowe, Jonson, Webster, Ford, and others. Prerequisites: Passing score on the Writing Sample Placement Test and one 300-level literature course or permission of instructor.

**ENGL 418W/518. Jewish Writers. 3 Credits.**

This course introduces students to the Jewish literary traditions and the cultural trends shaping these traditions and the Jewish identity. It will examine the impact of such issues as immigration, family, marginality, the Holocaust, assimilation, cultural diversity, feminism, Israel, race and religion. The readings will consist of short stories, poems, essays, novels, and autobiographical writing. (This is a writing intensive course.) Prerequisites: One 300-level literature course or permission of instructor and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**ENGL 421/521. British Literature 1660-1800. 3 Credits.**

British literature from the Restoration of the monarchy after the Civil War and Puritan Commonwealth to the French Revolution, focusing on how cultural changes (legalized female actors, commercialized printing, colonialism, and growing market capitalism) interacted with the flowering of satire and scandalous theatrical comedy, and the emergence of modern literary forms (periodical journalism, 'picturesque' poetry, and the novel). Prerequisites: Passing score on the Writing Sample Placement Test and one 300-level literature course or permission of instructor.

**ENGL 423/523. The Romantic Movement in Britain. 3 Credits.**

A study of the literature written in Britain between 1770-1830, focusing on how the literary experiments and innovations of poets like Blake, Wordsworth, Coleridge, Byron, Percy Shelley, Keats, Burns, and Barbauld, and of novelists like Mary Shelley, Radcliffe, and Scott interacted with cultural changes such as the Industrial Revolution, the French Revolution, and the emergence of feminism and working-class radicalism. Prerequisites: Passing score on the Writing Sample Placement Test and one 300-level literature course or permission of instructor.

**ENGL 424/524. Short Works in Narrative Media. 3 Credits.**

This course examines short narrative forms in film, video, literature, and multi-media. Individual works will be considered, both for the specific ways in which they make use of the medium in which they appear and for the qualities they share. Particular emphasis will be placed on the relationship between writing and visualization. Students will engage in both creative and critical exercises, so as to see the process from both sides: creative production and critical analysis. Prerequisites: Passing score on the Writing Sample Placement Test and ENGL 312 or permission of instructor.

**ENGL 425/525. World Film Directors in Context. 3 Credits.**

This course will explore the works of several directors from a variety of world regions. Films will be considered as part of the body of work by each director, as well as in the context of the regions' other arts, traditions, popular culture, and historical events. Students will become familiar, therefore, with aesthetic, literary, sociological, anthropological and historical approaches to the analysis of film. Prerequisites: Passing score on the Writing Sample Placement Test and ENGL 312 or permission of instructor.

**ENGL 427W/527. Writing in the Disciplines. 3 Credits.**

This is a discussion/workshop course emphasizing contexts and strategies of text production in and across academic disciplines and professional settings. Students will produce a variety of texts designed to meet the needs of specific audiences. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C.

**ENGL 432/532. Origins and Early Development of the British Novel to 1800. 3 Credits.**

A study of early novels and how the novel developed from other traditions such as the epic, romance, criminal biography, and travel narrative. Prerequisites: Passing score on the Writing Sample Placement Test and one 300-level literature course or permission of instructor.

**ENGL 433/533. Victorian Literature. 3 Credits.**

A study of the chief writers and the cultural and philosophical backgrounds of the Victorian era, touching on the changes from the early to the later part of the period. Works analyzed include fiction, nonfiction prose, and poetry. Prerequisites: Passing score on the Writing Sample Placement Test and one 300-level literature course or permission of instructor.

**ENGL 435W/535. Management Writing. 3 Credits.**

This course focuses on writing as a means of making and presenting management decisions. (This is a writing intensive course.) Prerequisites: Passing score on the Writing Sample Placement Test, a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, and six semester hours in English, to include ENGL 334W or permission of the instructor.

**ENGL 438/538. The Twentieth-Century British Novel. 3 Credits.**

Offered in specific sections of 1900-1945, 1945-present, 1900-present. Major British novels are studied. Prerequisites: Passing score on the Writing Sample Placement Test and one 300-level literature course or permission of instructor.

**ENGL 439/539. Writing in Digital Spaces. 3 Credits.**

This course offers composition practice in critical contemporary digital environments. Readings and discussions will provide the history of and context for these digital spaces. Students should expect to participate in, develop, and engage in critical discussions about a range of digital spaces, including websites, wikis, blogs, and various interactive media. Prerequisites: ENGL 307T or equivalent or permission of instructor.

**ENGL 440/540. General Linguistics. 3 Credits.**

An introduction to linguistic analysis. Emphasis is on the analysis of sound systems (phonetics, phonology) and the structure of words and sentences (morphology and syntax). Prerequisites: Passing score on the Writing Sample Placement Test, ENGL 110C, and three additional hours in English.

**ENGL 441/541. American Travel Literature. 3 Credits.**

This is a survey course that examines the American experience, American identity and American culture through travel "texts" that include prose, poetry, art, and film. The course takes an interdisciplinary American Studies approach, using lenses such as race, gender, and class. Prerequisites: ENGL 112L or ENGL 114L.

**ENGL 442/542. English Grammar. 3 Credits.**

Prerequisites: ENGL 350 or permission of instructor. This course is a descriptive study of English grammar as it relates to the contexts in which it is used, with implications for grammar pedagogy and TESOL classrooms.

**ENGL 443/543. Southern and African American English. 3 Credits.**

This course focuses on the linguistic diversity of the American South, with emphasis on Southern White and African American varieties of English. It examines variation and change in the phonological, lexical, and syntactic systems, language contact, and dialect discrimination directed towards Southern and African American speakers, both inside and out of the South. Prerequisites: Passing score on Writing Sample Placement Test and three upper division hours in English or permission of instructor.

**ENGL 444/544. History of the English Language. 3 Credits.**

A study of the origins and development of the English language. Primary focus is on sound, word, and grammatical changes. Prerequisites: Passing score on the Writing Sample Placement Test and one 300-level linguistics course (ENGL 370 recommended).

**ENGL 446/546. Studies in American Drama. 3 Credits.**

With rotating topics, this course will pursue particular themes or periods in American drama and theater. Potential areas of inquiry might include melodrama, the early transatlantic stage, rise of stage realism, age of O'Neill, or the contemporary drama. Prerequisites: Passing score on the Writing Sample Placement Test and 300-level literature course, ENGL 340 preferred.

**ENGL 447/547. The American Novel to 1920. 3 Credits.**

Examination of the American novel from its origins in the late eighteenth century through World War I. The course will emphasize the novel as a genre, cultural trends during the period, and such relevant literary modes as romanticism, realism, and naturalism. Prerequisites: Passing score on the Writing Sample Placement Test and one 300-level literature course, ENGL 346 preferred.

**ENGL 448/548. The American Novel 1920 to Present. 3 Credits.**

Examination of the American novel from the end of World War I to the present day. The course will emphasize formal issues related to the genre of the novel and relevant literary and cultural trends during the period including modernism and postmodernism. Prerequisites: Passing score on the Writing Sample Placement Test and one 300-level literature course, ENGL 346 preferred.

**ENGL 449/549. Craft of Literary Nonfiction. 3 Credits.**

A detailed study of technique in literary nonfiction with an emphasis on the memoir, the essay, reportage, and travel narrative. Especially designed for, but not limited to, creative writing students; supplements the creative writing workshops. Prerequisites: ENGL 300 and six semester hours in literature, or three semester hours in literature and permission of the instructor.

**ENGL 450/550. American English. 3 Credits.**

This course explores the geographic, social, and stylistic diversity of English spoken in the U.S. It also examines how perceptions of dialect diversity affect access to education and other socioeconomic opportunities. Prerequisites: Passing score on the Writing Sample Placement Test and one 300-level linguistics course or permission of the instructor.

**ENGL 451/551. Advanced Fiction Workshop. 3 Credits.**

This course, an expansion of the principles and techniques learned in ENGL 351, focuses on the writing and criticism of the short story, the novella, and the novel. Prerequisites: Passing score on the Writing Sample Placement Test and ENGL 351; junior standing, or permission of the instructor, based on writing samples submitted.

**ENGL 452/552. Advanced Poetry Workshop. 3 Credits.**

This course, an expansion of the principles and techniques learned in ENGL 352, focuses on the writing and criticism of poetry. Prerequisites: Passing score on the Writing Sample Placement Test; ENGL 352; and junior standing or permission of the instructor, based on writing samples submitted.

**ENGL 454/554. Creative Nonfiction. 3 Credits.**

A course in the techniques of writing nonfiction imaginatively within a factual context. Emphasis is placed on regard for reader psychology, selection of significant detail, and the development of a style at once lively and lucid. Assignments are made individually with regard to the student's field of interest-- history, biography, science, politics, informal essay, etc. Advice is given on the marketing of promising manuscripts. Prerequisites: Passing score on the Writing Sample Placement Test; ENGL 327W or ENGL 351; and junior standing or permission of the instructor, based on writing samples submitted.

**ENGL 455/555. The Teaching of Composition, Grades 6-12. 3 Credits.**

A study of the theory and practice of teaching writing. Special attention will be given to the ways effective teachers allow theories and experiences to inform their pedagogical strategies. Prerequisites: Passing score on the Writing Sample Placement Test and twelve semester hours in English to include ENGL 327W.

**ENGL 456/556. The Craft of Fiction. 3 Credits.**

A detailed study of fictional technique in the novel and short story, with emphasis on character development, conflict, point of view, plot, setting, mood, tone, and diction. Especially designed for, but not limited to, creative writing students; supplements the creative writing workshops. Prerequisites: Passing score on the Writing Sample Placement Test; six semester hours in literature or ENGL 300 plus three semester hours in literature; junior standing or permission of the instructor.

**ENGL 457/557. The Craft of Poetry. 3 Credits.**

A detailed study of technique in poetry, with emphasis on form, imagery, rhythm, and symbolism. Especially designed for, but not limited to, creative writing students; supplements the creative writing workshops. Prerequisites: Passing score on the Writing Sample Placement Test; six semester hours in literature or ENGL 300 plus three semester hours in literature; junior standing or permission of the instructor.

**ENGL 459W/559. New Literatures in English. 3 Credits.**

A study of the diverse "new" literatures in English, including those of the Caribbean and Central America, Africa, India, as well as of Canada and Australia, in their current historical and political contexts. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**ENGL 460/560. The Literature of Fact. 3 Credits.**

A detailed study of the literary tradition of creative nonfiction. Prerequisites: Passing score on the Writing Sample Placement Test and one 300-level literature course or permission of instructor.

**ENGL 461/561. Poetry of the Early Twentieth Century. 3 Credits.**

Works of major British and American poets from 1900 to 1945 are studied. Prerequisites: Passing score on the Writing Sample Placement Test and one 300-level literature course or permission of instructor.

**ENGL 462/562. Sacred Texts as Literature. 3 Credits.**

A study of how sacred texts reshape a variety of literary forms (narratives, drama, poetry, biography, history). The course may focus on a particular text or a collection of texts drawn from a variety of faith traditions and/or spiritual experiences. Prerequisites: Passing score on the Writing Sample Placement Test, literature way of knowing requirement and six-hour general education composition requirement or permission of instructor.

**ENGL 463W/563. Women Writers. 3 Credits.**

This course applies concepts developed through women's studies scholarship and feminist literary criticism to works by women writers of different races and cultures. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C and one 300-level literature course or permission of instructor.

**ENGL 464W/564. Native American Literature. 3 Credits.**

This class offers an investigation of Native American literature both past and present and seeks to foster an appreciation for indigenous cultures, traditions, and the ongoing concerns that inform so much of Native literary output. By privileging Native centered approaches to narrative and history-keeping, the course hopes to instill a greater understanding of the issues Native peoples faced in the colonial milieu and the continued implications of those histories for Native communities and indigenous identities today. Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, passing score on the Writing Sample Test and one 300-level literature course.

**ENGL 465W/565. African American Literature. 3 Credits.**

An investigation of the ways in which literary movements, historical events, social transitions, and political upheavals have influenced African-American literature. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, passing score on the Writing Sample Placement Test and one 300-level literature course or permission of instructor.

**ENGL 466W/566. Asian American Literature. 3 Credits.**

The course introduces students to key texts in Asian American literature, supported by critical studies (and occasion films) to interrogate the theme of Asian American identities in their multiple forms. The course will examine sociopolitical histories that undercut the literature and the contributions of Asian American writers to the breadth and scope of American as well as global literature today. Prerequisites: A grade of C or better in ENGL 110C, ENGL 211C or ENGL 221C or ENGL 231C, and any 300-level literature course.

**ENGL 468. Advanced Writing Internship. 3 Credits.**

Permission of department internship coordinator required. A structured work experience involving writing and editing in a professional setting. Prerequisites: Passing score on the Writing Sample Placement Test and 15 hours in English, with ENGL 327W or ENGL 334W recommended.

**ENGL 473/573. Writing with Video. 3 Credits.**

This course engages students in a comprehensive exploration of video as a rhetorical narrative medium, with emphasis on the actual production of video work. Writing is also integrated into the production process. From brainstorming to storyboarding and critique, writing is positioned as an integral part of the course. Prerequisites: ENGL 307T.

**ENGL 474. Teaching Literature with Film. 3 Credits.**

The purpose of this course is to help current or prospective English teachers effectively use films or movies to teach their literature courses. The course will examine appropriate aspects of film and literary theory as well as provide students practice in teaching literature with film. Prerequisites: ENGL 112L and ENGL 114L.

**ENGL 477/577. Language, Gender and Power. 3 Credits.**

This interdisciplinary course explores how language reflects and interacts with society, with particular emphasis on gender and race. Topics include definition, framing, stereotypes, language taboos, and powerful and powerless language. Prerequisites: Passing score on the Writing Sample Placement Test, junior standing and three upper division hours in English, or permission of the instructor.

**ENGL 478. The Craft of Multimedia Journalism. 3 Credits.**

This course is designed to introduce students to audio and visual storytelling. Students will expand their reporting repertoire to incorporate the use of audio, still photography, and video into what they have already learned about print reporting. Staff positions in media organizations and freelance journalism now require a command of multimedia skills; however, the foundation of all good story telling--even in the multi-platform, digital age--remains the written word. This course will enable students to develop an understanding of visual story-telling and the production of multimedia news and feature stories. Prerequisites: ENGL 380 and ENGL 382.

**ENGL 480/580. Investigative Reporting Techniques. 3 Credits.**

This course explores how journalists pursue investigative projects that expose waste, mismanagement, conflicts of interest, dangerous business practices, and otherwise challenge the status quo. With a focus on both high tech and traditional research skills, the course will provide instruction in accessing government records kept by local, state and federal agencies. In pursuing in-depth stories that make a difference, contemporary journalists develop strategies for gathering and analyzing data, use social media in pursuit of stories and present stories for print, broadcast and online platforms. Prerequisites: passing score on the Writing Sample Placement Test and ENGL 380.

**ENGL 481/581. Advanced Public Relations. 3 Credits.**

Designed to strengthen the skills of the public relations practitioner with emphasis on the creative aspects of problem solving. Attention is given to crisis public relations, interviewing, speech writing, and graphics. Prerequisites: ENGL 381 and passing score on the Writing Sample Placement Test or permission of the instructor.

**ENGL 482/582. Sports Journalism. 3 Credits.**

This is primarily a sportswriting course in which students are introduced to various types and styles of sports stories that are representative of sports journalism as practiced in newspapers and magazines. The course also explores the role of sports in American society. Prerequisites: A grade of C or better in ENGL 110C and ENGL 211C; passing score on the Writing Sample Placement Test.

**ENGL 483W/583. Reporting and News Writing II. 3 Credits.**

Designed to familiarize students with the fundamentals of beat reporting and its practice in the multi-media environment of "converged" newsrooms. The course emphatically focuses on writing but also provides instruction on how the tools and techniques of multimedia platforms are used to enhance storytelling. Emphasis is also placed on accessing information through web-based resources and government documents. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 110C and ENGL 211C; ENGL 380 or permission of instructor.

**ENGL 484/584. Feature Story Writing. 3 Credits.**

Course includes discussion and practice of writing a variety of newspaper and magazine feature stories. Students will write and critique stories on people, places, businesses, trends, and issues. Assistance is given in the marketing of manuscripts. Prerequisites: Passing score on the Writing Sample Placement Test and nine semester hours in English.

**ENGL 485W/585. Editorial and Persuasive Writing. 3 Credits.**

A study of the practice and function of writing editorials, commentary, reviews and columns for newspapers and online media. Lectures will focus on the techniques of crafting a persuasive argument, content analyses of Pulitzer Prize-winning editorials and columns, and guest lectures by newspaper editorial writers. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C; ENGL 380.

**ENGL 486/586. Media Law and Ethics. 3 Credits.**

Designed to introduce students to components of communication law that may affect the professional writer or broadcaster. Topics include defamation, constitutional constraints, freedom of information, privacy, copyright, and telecommunications law. Ethical issues relating to the mass media will also be examined. Prerequisites: Passing score on the Writing Sample Placement Test and junior standing or permission of the instructor.

**ENGL 487. Television News Production Workshop. 3 Credits.**

This course is designed to introduce students to the reporting, writing, and production of a television news program. Students will learn how to create a 30-minute news program from the framing of story ideas and news gathering to shooting and editing video along with the production process involved in recording a live news broadcast. Each student will spend time both in front of and behind the video and television studio cameras. The goal of this course is to produce weekly news broadcasts. In doing so, students will alternately assume the roles of reporter, writer, producer, director, anchor, photojournalist, technician, and more. Using the campus and surrounding neighborhoods as our news universe, students will report news and feature stories that impact the University and its neighbors. Prerequisites: ENGL 380 or ENGL 382 or COMM 271 or THEA 271.

**ENGL 492/592. Modern World Drama. 3 Credits.**

A comparative study of selected major dramatic works of the world, featuring texts drawn from a range of cultures from around the globe. The course will begin in the late nineteenth century and continue to the present. Works written in languages other than English will be read in translation. Prerequisites: passing score on the Writing Sample Placement Test and one 300-level literature course or permission of the instructor.

**ENGL 493/593. Contemporary World Literature. 3 Credits.**

Fiction, poetry, and plays written during the last fifty years in nations throughout the world. Most texts will have been written originally in languages other than English. The course will focus on a comparative study of works produced in a variety of cultural contexts, and will explore a range of approaches to defining or circumscribing world literature. Prerequisites: passing score on the Writing Sample Placement Test and one 300-level literature course or permission of the instructor.

**ENGL 495/595. Topics in English. 1-3 Credits.**

The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, because of their specialized nature, may not be offered regularly. These courses will appear in the course schedule and will be more fully described in information distributed to all academic advisors. Prerequisites: passing score on the Writing Sample Placement Test and three semester hours in literature.

**ENGL 496/596. Topics in English. 1-3 Credits.**

The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, because of their specialized nature, may not be offered regularly. These courses will appear in the course schedule and will be more fully described in information distributed to all academic advisors. Prerequisites: passing score on the Writing Sample Placement Test and three semester hours in literature.

**ENGL 497. Tutorial Work in Special Topics in English. 1-3 Credits.**

Independent study in literature, writing, or linguistics according to a program of reading and/or writing designed under the direction of an instructor. Prerequisites: passing score on the Writing Sample Placement Test, senior standing and approval of the chair of the Department of English.

**ENGL 498. Tutorial Work in Special Topics in English. 1-3 Credits.**

Independent study in literature, writing, or linguistics according to a program of reading and/or writing designed under the direction of an instructor. Prerequisites: passing score on the Writing Sample Placement Test, senior standing and approval of the chair of the Department of English.

## ENGN - Engineering

### ENGINEERING Courses

**ENGN 108. Introduction to Engineering. 3 Credits.**

A one-semester course covering topics in civil, environmental, mechanical, electrical and computer engineering. For non-engineering majors. Prerequisites: MATH 102M.

**ENGN 110. Explore Engineering and Technology. 2 Credits.**

A series of projects to introduce a variety of engineering and technology disciplines; hand-on experiences with selected engineering problems and issues; team approach to managing engineering projects; discovering the unknown, formulating solutions, designing, manufacturing, and testing; emphasis on learning modules, communication and presentation skills, creativity and innovation.

**ENGN 301. e-Engineering. 3 Credits.**

A study of the theory and best practices involved in conducting physically-dispersed engineering team collaboration. Student teams will apply e-Engineering concepts using a distributed product engineering scenario. Course module topics include project management, virtual teaming, distributed collaborative tools, and scenario-specific engineering skills. Prerequisites: junior standing.

**ENGN 401. Fundamentals of Engineering Review. 1 Credit.**

This course prepares the engineering and engineering technology students for the Fundamentals of Engineering Examination. Prerequisites: junior standing.

**ENGN 411. Energy Management and Policy. 3 Credits.**

An introduction to energy management and contemporary policy issues. Topics include energy history, energy management principals, energy auditing, rates for commercial and industrial consumers, energy security and reliability, utility deregulation and energy system outsourcing, financing energy management projects, codes and standards, energy and climate change, and use of alternative energy. Prerequisites: Junior standing, PHYS 111N and MATH 162M.

**ENGN 412. Fundamentals of Energy Conversion and Transmission. 3 Credits.**

A general overview of energy conversion and transmission systems. The topics will include energy resources and units, fossil fuels, natural gas, nuclear fuel, energy from renewables, energy efficiency, energy management control systems, energy systems integration, energy systems and cyber security. Prerequisites: Junior standing, PHYS 111N and MATH 162M.

**ENGN 454/554. Introduction to Bioelectrics. 3 Credits.**

Covers the electrical properties of cells and tissues as well as the use of electrical and magnetic signals and stimuli in the diagnosis and treatment of disease. Typical topics to be covered include basic cell physiology, endogenous electric fields in the body, electrocardiography, cardiac pacing, defibrillation, electrotherapy, electroporation, electrotherapy in wound healing. In addition, ultrashort electrical pulses for intracellular manipulation and the application of plasmas to biological systems will be covered. (Cross-listed with ECE 454/554) Prerequisites: PHYS 111N or higher; MATH 200 or higher.

**ENGN 495. Multidisciplinary Topics in Engineering and Technology. 1-3 Credits.**

Special interdisciplinary or multidisciplinary topics of interest with emphasis on emerging areas in engineering. Prerequisites: instructor permission.

# ENGT - Engineering Technology

## ENGINEERING TECHNOLOGY Courses

### ENGT 111. Engineering Technology Information Literacy/Research. 2 Credits.

Fundamental information literacy and research as applied to engineering technology. Course includes where and how to efficiently locate and critically evaluate technical information. Proper use of technical information and the associated ethical and legal issues will be examined. Prerequisite: ENGN 110.

# ENMA - Engineering Management

## ENGINEERING MANAGEMENT Courses

### ENMA 301. Introduction to Engineering Management. 3 Credits.

An introduction to principles of management and organizational behavior as they apply to the engineering profession. Special emphasis on team building, quality leadership and planning, handling personnel issues, and marketing technology. Group exercises, case studies, and extensive writing and speaking assignments. Prerequisites: Junior standing.

### ENMA 302. Engineering Economics. 3 Credits.

Introduction to cost estimation, accounting and financial metrics. Valuation techniques, time value of money, and cash flow analysis. Economic analysis of engineering alternatives including depreciation effects, income taxes, inflation, engineering management capital budgeting of projects, portfolio and public sector projects.

### ENMA 401. Project Management. 3 Credits.

Foundations, principles, methods, and tools for effective design and management of projects in technology-based organizations. Project organization, life cycle, planning, scheduling, implementation, control, and evaluation. Special emphasis on project leadership, problem solving in team-based projects, project failure analysis, and advanced methods. Use of case studies and applications to reinforce course concepts. Students design and plan a project from concept through completion including proposal and post-project analysis. Prerequisites: Junior standing.

### ENMA 410/510. Agile Project Management. 3 Credits.

This course focuses the management of projects using an agile approach to respond to the continuous changes that affect project capabilities and performance. Although any project can be managed using agile project management, projects with high degree of uncertainty obtain the most benefits from this approach (e.g., R&D projects). The course covers Scrum and expands it by articulating the human and business factors that make successful agile project management. Case studies and/or short-projects are required. Prerequisites: ENMA 401 or equivalent.

### ENMA 415/515. Introduction to Systems Engineering. 3 Credits.

Introduces the principles, concepts and process of systems engineering. Examination of problem formulation, analysis, and interpretation as they apply to the study of complex systems. Emphasizes the design nature of systems engineering problem solving, and includes case studies stressing realistic problems. Development of system requirements, system objectives, and the evaluation of system alternatives. Prerequisites: Junior standing.

### ENMA 420/520. Statistical Concepts in Engineering Management. 3 Credits.

Introduction to concepts and techniques in probability and statistics, including descriptive and inferential statistics. Topics include fundamentals of probability, distributions, estimation, hypothesis testing, regression, process control, and reliability. Applications include engineering design and analysis, manufacturing, decision aids, and quality management problems. Prerequisites: MATH 211 or equivalent.

### ENMA 421. Decision Techniques in Engineering. 3 Credits.

A systematic approach to the formulation of problems, the generation and evaluation of alternatives, and the selection and implementation of courses of action applied to engineering design, manufacturing, and management decisions. Topics include: goals and objectives; variables and relations; constraints and feasibility; uncertainty and risk; models and optimization; data and information; analysis and simulation. Case studies requiring oral presentations and written reports are used to emphasize concepts and systems analysis. Prerequisite: Junior standing. Pre- or corequisite: ENMA 420.

### ENMA 424. Risk Analysis in Engineering Management. 3 Credits.

Prerequisites: Junior standing. The systematic approach to analysis of risk as applied to engineering, production, and management decisions is covered. The objectives of this course are (1) to gain an appreciation of the strategic importance of risk analysis and its relationship to other business and engineering functions and (2) to develop a working knowledge of the concepts and methods in risk analysis.

### ENMA 444. Leading Engineering Organizations. 3 Credits.

Prerequisites: Junior standing. This course is designed to expose prospective engineers to leadership theories and practices encountered in the day-to-day activities of an engineering manager. Topics include leadership definitions, in-depth explorations of relevant leadership theories, exposure to concepts and practices that include the definition and exercise of power, leading empowered teams, communicating effectively, appreciating diversity and applying the ethical foundations of leadership. Students will identify, explore and analyze best practices of leaders and are expected to use the knowledge and skills gained in the course to create a service oriented leadership development.

### ENMA 480. Ethics and Philosophy in Engineering Applications. 3 Credits.

This course is designed to expose prospective engineering managers the theories and practices that are inherent in the ethical environment of modern organizations. Topics include definitions of ethical behavior and leadership, the history of ethical thought, moral decision-making, and the importance of values such as honesty, integrity, and trustworthiness. A full exploration of ethical autonomy, collaboration, communication and moral imagination will be conducted. A variety of methods will be used to facilitate learning, including a textbook, movie and videos, case studies, experiential activities and writing assignments. The successful student should gain a full appreciation for the value and practices of ethical leadership. Prerequisites: Junior standing.

### ENMA 495. Topics in Engineering Management. 1-6 Credits.

Special topics with emphasis placed on the recent developments in engineering management. Prerequisites: permission of the instructor.

# ENTR - Entrepreneurship

## ENTREPRENEURSHIP Courses

### ENTR 201S. Introduction to Entrepreneurship. 3 Credits.

This course will broaden students' views of careers and work in an increasingly global and diverse world. It provides students intellectual perspectives of entrepreneurship, and engages students in the search for knowledge regarding opportunity value and resource management. Basic analytical and critical thinking skills are developed for making reasoned judgments concerning organization creation.

# ENVH - Environmental Health

## ENVIRONMENTAL HEALTH Courses

### ENVH 301W. Environmental Health. 3 Credits.

An introduction to the chemical, physical and biological factors affecting human health and well-being. The emphasis is on application of controls to prevent disease and maximize environmental quality. (This is a writing intensive course.) Prerequisites: junior standing and a grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C.



**ENVH 395. Topics in Environmental Health. 1-3 Credits.**

Advanced study of selected topics. Prerequisites: permission of the instructor.

**ENVH 401/501. Occupational Health. 3 Credits.**

An introduction to the industrial environment relative to health problems and the etiologically related agents. Prerequisites: junior standing.

**ENVH 402W/502. Environmental Health Administration and Law. 3 Credits.**

A review of the concepts and practice of administering environmental health control programs within agencies at the federal, state and local levels. The principles of administration and leadership of programs in the private sector are also discussed. The constitutional, statutory and administrative law bases for organizing and conducting such programs and developing environmental policy as well as the legal implications of enforcement will be addressed. A review of all major environmental statutes and their agencies that enforce them will be addressed. (This is a writing intensive course.) Prerequisites: junior standing and a grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C.

**ENVH 403. Environmental Health Internship I. 3 Credits.**

Includes placement in a health-related facility or industrial setting, prearranged with faculty instructor. (qualifies as a CAP experience) Prerequisites: ENVH 301W and permission of program director.

**ENVH 404. Environmental Health Internship II. 3 Credits.**

Includes placement in a health-related facility or industrial setting, prearranged with faculty instructor. (qualifies as a CAP experience) Prerequisites: ENVH 301W and permission of program director.

**ENVH 405. Environmental Health Internship III. 6 Credits.**

Includes placement in a health-related facility or industrial setting, prearranged with faculty instructor. (qualifies as a CAP experience) Prerequisites: ENVH 301W and permission of program director.

**ENVH 406/506. Principles of Occupational Safety and Health. 3 Credits.**

A broad overview of the field of safety. A study of the factors influencing the occurrence of accidents and incidents is set in the context of safety legislation, current issues in the practice of safety and the ethical and professional responsibilities of the safety practitioner. The course also includes discussions of product safety, fire prevention and protection systems safety and human elements in loss prevention. Prerequisites: junior standing.

**ENVH 407/507. Occupational Safety Standards, Laws and Regulations. 3 Credits.**

A review of the important Occupational Safety and Health Standards and Codes with particular emphasis on application of these codes to typical work situations. Governmental enforcement methodologies are also discussed. Prerequisites: junior standing.

**ENVH 420/520. Communicable Diseases and Their Control. 3 Credits.**

An in-depth study of the communicable disease processes as they pertain to environmental sources. A detailed discussion of specific communicable diseases that are manifested by various environmental etiologic agents. Various environmental control measures to prevent the incidence of communicable diseases are presented. Prerequisites: junior standing.

**ENVH 421/521. Food Safety. 3 Credits.**

A comprehensive study of food and milk production, processing and preservation and controls exercised for the prevention of foodborne illnesses and spoilage. Prerequisites: junior standing.

**ENVH 422/522. Water and Wastewater Technology. 3 Credits.**

Introduction to water quality management and wastewater treatment technology. Topics include the effect of organic, inorganic and thermal pollutants in water quality streams, waterborne diseases, monitoring concepts, methods of water quality management, regulatory considerations, theory and application of wastewater treatment concepts, wastewater characterization, and treatment methods and disposal methods. Prerequisites: junior standing.

**ENVH 423/523. Vector Control. 3 Credits.**

A study of the vectors of human disease and the methods utilized in their control. (offered spring) Prerequisites: junior standing.

**ENVH 424/524. Residential and Institutional Environments. 3 Credits.**

A study of the physical aspects of housing and institutions as they relate to human health and well-being. Coverage is also given to infection control in health-care facilities. Prerequisites: junior standing.

**ENVH 425/525. Occupational Safety and Health Program Management. 3 Credits.**

The establishment, implementation and maintenance of occupational safety and health programs. Paradigms of safety, techniques for safety training and creation of value for safety among business managers and employees are emphasized. Prerequisites: junior standing.

**ENVH 426/526. Physical Hazards and Their Control. 3 Credits.**

An in-depth examination of the varied types of physical hazards in the work environment and the methods of prevention, recognition and control. Prerequisites: junior standing.

**ENVH 440/540. Principles of Ergonomics. 3 Credits.**

An introduction to the terminology, concepts and applications of physiology, anthropometry, biomechanics and engineering to workplace and work methods design. Emphasis will be given to workplace design and work methods for job safety and health. Prerequisites: junior standing.

**ENVH 441/541. Industrial Hygiene. 3 Credits.**

An in-depth study of the chemical and physical agents responsible for occupational illness and the methods used for their measurement, evaluation and control. Prerequisites: junior standing.

**ENVH 442/542. Sampling and Analysis Laboratory. 2 Credits.**

Use and application of sampling and analytical equipment for measurement of chemical agents in the environment. Includes collecting media selection, sampling strategy, sample preparation and analysis. Prerequisites: ENVH 441 or permission of the instructor.

**ENVH 443. Principles of Toxicology. 3 Credits.**

An introduction to the fundamentals of toxicology with emphasis on the interaction of environmental and industrial chemicals with humans are studied. Exposure, dose response, kinetics and distribution of toxicants, metabolism of toxic agents, factors that affect toxicity and introductory chemical carcinogenesis are discussed. Prerequisites: junior standing and BIOL 250.

**ENVH 445/545. Air Pollution and Its Control. 3 Credits.**

The study of air pollution in relation to air quality criteria, pollutant production, atmospheric evolution, measurement and control techniques. Prerequisites: junior standing.

**ENVH 446/546. Physical Hazards Laboratory. 2 Credits.**

Use and application of sampling methods and equipment for measurement of physical hazards in the work environment. Includes aspects such as ergonomics, noise, vibration and radiation. Prerequisites: ENVH 441 or permission of the instructor.

**ENVH 448/548. Epidemiology and Biostatistics. 3 Credits.**

An introductory course in the principles and practices of epidemiology and the application of statistical and mathematical design and analysis of health research studies for the understanding and control of population health and disease with emphasis on environmental applications. Prerequisites: junior standing.

**ENVH 461/561. Hazardous Waste Management. 3 Credits.**

Description of the hazardous waste problem, the fundamentals of the chemistry involved with hazardous waste transport, methods of identification, assessment, control, and disposal of toxic and hazardous waste are discussed. In addition the relevant legal statutes, risk assessment emergency response and case studies are presented. Introduction to the toxicological effects of exposure to hazardous waste is discussed. Prerequisites: junior standing.

**ENVH 465/565. Hazardous Materials Management. 3 Credits.**

The management of hazardous materials includes a wide array of interlocking regulations addressing use, manufacturing, exposure, storage, shipping and disposal. A life cycle review of hazardous materials highlighting best practices and legislation is presented. Useful in preparation for CHMM examination. Prerequisites: junior standing.

**ENVH 466/566. Environmental Risk Assessment and Decision Analysis. 3 Credits.**

The principles of quantitative health risk assessment of toxicants are presented. Qualitative and quantitative skills necessary to evaluate the probability of injury, disease, or death in the general population from exposure to environmental contaminants are discussed. Hazardous identification, exposure assessment, dose-response evaluation and risk characterization are emphasized. Risk management group projects assessing some real environmental risks is an important segment of the class. Prerequisites: junior standing.

**ENVH 470/570. Industrial Environmental Management. 3 Credits.**

Course addresses day-to-day technical and management aspects of environmental compliance, as well as regulatory issues faced in industrial applications. Includes audits and inspections, air and water pollution and hazardous waste. Prerequisites: junior standing.

**ENVH 495/595. Topics in Environmental Health. 1-3 Credits.**

Advanced study of selected topics. Prerequisites: junior standing.

**ENVH 498/598. Independent Study in Environmental Health. 1-3 Credits.**

An opportunity is afforded students to undertake independent study under the direction of a faculty member. Prerequisites: permission of the Program Director.

**ENVH 499. Environmental Health Senior Seminar. 1 Credit.**

Advanced seminar Prerequisites: second semester senior standing and permission of the program director.

## EXSC - Exercise Science

### EXERCISE SCIENCE Courses

**EXSC 225. Introduction to Exercise Science. 3 Credits.**

Broad overview of exercise science including the history of the discipline and introduction to the following: Healthy People 2010 goals and objectives related to physical activity and nutrition; basic principles of nutrition, body composition, applied physiology, functional anatomy, and exercise prescription/programming for healthy individuals and those who are high risk/diseased; career opportunities in various allied-health fields such as physical therapy, physician assistant, personal training, community/corporate/hospital-based wellness programs, cardiac rehabilitation; and research areas in exercise science.

**EXSC 240. Prevention and Care of Injuries Related to Physical Activity. 3 Credits.**

Practice in the skills of injury recognition and evaluation and training in cardiopulmonary resuscitation. Principles and uses of therapeutic modalities are also discussed Prerequisites: BIOL 250 and MATH 102M or MATH 103M or MATH 162M.

**EXSC 250. Strength and Conditioning Leadership. 3 Credits.**

This course will provide the student with skills in exercise leadership. The student will learn how to lead resistance training, flexibility training, cardiovascular training involving a variety of exercise modes, and group exercise, such as step aerobics. Prerequisite: BIOL 250 with a grade of C or better and MATH 102M with a grade of C or better.

**EXSC 322. Anatomical Kinesiology. 3 Credits.**

Anatomical and mechanical analysis of human musculoskeletal function including skeletal, muscular, and neuromuscular control aspects necessary for movement. Prerequisites: BIOL 250 with a grade of C or better and MATH 102M with a grade of C or better.

**EXSC 326. Exercise Physiology I. 3 Credits.**

An investigation into the metabolic adaptations, neuromuscular, endocrinological, and respiratory responses to acute and chronic exercise endeavors. Implications for enhanced health and physical performance are integrated Prerequisites: BIOL 250 and MATH 102M or MATH 103M or MATH 162M with a C or better.

**EXSC 327. Exercise Physiology II. 3 Credits.**

Focuses on cardiovascular responses to exercise and applied exercise physiology, specifically the effects of different training modes, environmental factors, aging, disease states, nutrition, and ergogenic aids. Prerequisites: BIOL 250 and MATH 102M or MATH 103M or MATH 162M with a C or better; EXSC 326.

**EXSC 366. Exercise Science Seminar. 1 Credit.**

Seminar will include resume and cover letter writing skills, internship requirements, agency placement referrals, interviewing techniques, and certification options. Prerequisites: BIOL 250, MATH 102M, EXSC 326 and Junior Standing.

**EXSC 368. Internship. 12 Credits.**

Prerequisites: senior standing, permission of the instructor, and completion of all required courses in appropriate emphasis areas. Final field placement required for all students with an emphasis in exercise science. Students will be placed in an agency to gain experience in methodologies, administration techniques, and programs specific to their area of emphasis. Minimum of 400 clock hours. (qualifies as a CAP experience).

**EXSC 369. Practicum in Exercise Science. 3-6 Credits.**

Field-based experience in a fitness or allied-health setting. Minimum of 200 clock hours. (qualifies as a CAP experience) Prerequisites: EXSC 225.

**EXSC 397. Independent Study. 1-3 Credits.**

Independent study of special topic under supervision of faculty. Prerequisites: Junior standing and permission of the instructor.

**EXSC 403. Lifetime Fitness and Wellness. 3 Credits.**

The focus of this course is on a positive healthy lifestyle designed to enhance the current and future quality of life. Topics include: proper exercise programs, healthful nutrition, stress management techniques, and avoidance of high-risk health behaviors in order to reduce disease risk and promote healthful aging. Various laboratory assessments are used to identify health status and recommend remedial approaches. Prerequisites: Junior standing.

**EXSC 408/508. Nutrition for Fitness and Sport. 3 Credits.**

Emphasizes the role of nutrition as a means to enhance health and performance in sport. Topics covered include energy metabolism and nutrients, regulation of metabolism by vitamins and minerals, and weight control. Prerequisites: BIOL 250 with a grade of C or better and MATH 102M with a grade of C or better.

**EXSC 415/515. Exercise Testing for Normal and Special Populations. 4 Credits.**

The application of different methodologies in the measurement of physiologic responses to exercise. Emphasis is placed on understanding American College of Sports Medicine guidelines, appropriate experimental techniques, and equipment necessary to evaluate changes in body composition and various metabolic, cardiovascular, and respiratory adjustments during exercise. Prerequisites: A grade of C or better in MATH 102M and BIOL 250; EXSC 326.

**EXSC 417W/517. Biomechanics. 4 Credits.**

Application of physical laws and mechanical principles to the human musculoskeletal system. (This is a writing intensive course.) Prerequisite: MATH 102M, BIOL 250 and PHYS 111N with a grade of C or better; ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or better.

**EXSC 420. Research Methods in Exercise Science. 3 Credits.**

Introduction to the scientific method applied to exercise science research including bioethics, review of the literature, research design, data collection, appropriate statistical analysis, research writing, and peer review. Prerequisites: A grade of C or better in MATH 102M and BIOL 250; in addition, must pass STAT 130M.

**EXSC 428/528. Exercise Prescription for Chronic Disease. 3 Credits.**

A study of pathophysiology of common diseases with concentration in the design, implementation and administration of exercise prescription for a variety of chronic diseases. Prerequisites: MATH 102M and BIOL 250 with a grade of C or better; EXSC 326.

**EXSC 431/531. Wellness Programming and Administration. 3 Credits.**

An introduction to the principles of administration and implementation of fitness and wellness programs to individuals, groups, centers and corporate settings. Prerequisites: A grade of C or better in BIOL 250 and MATH 102M.

## FARS - Farsi

### FARSI Courses

**FARS 111F. Beginning Farsi. 6 Credits.**

Aural comprehension, oral drill and discussion of grammar principles, written exercises, and reading assignments.

**FARS 212. Intermediate Farsi. 6 Credits.**

Oral drill and discussion of grammar principles, written exercises and reading assignments. Prerequisite: FARS 111F.

## FAST - Filipino-American Studies

### FILIPINO-AMERICAN STUDIES Courses

**FAST 345. Philippine Society & Culture. 3 Credits.**

This course examines the social forces that shape the Philippines and their impact on the country's social, cultural, economic and political development. Prerequisites: SOC 201S or permission of the instructor.

**FAST 346. The Filipino American Community. 3 Credits.**

The course examines the histories, lived experiences, cultures, identities, and contributions of Filipino Americans. Using multiple theoretical perspectives it explores the intersection of class, race/ethnicity, gender, and specific immigration circumstances and historical background that are paramount in the community. Prerequisites: SOC 201S or permission of the instructor.

**FAST 395. Topics in Filipino American Studies. 3 Credits.**

A study of selected topics designed for non-majors, or for elective credit within a major. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors. Prerequisite: appropriate survey or introductory course or permission of the instructor.

**FAST 396. Topics in Filipino American Studies. 3 Credits.**

A study of selected topics designed for non-majors, or for elective credit within a major. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors. Prerequisite: appropriate survey or introductory course or permission of the instructor.

## FIN - Finance

### FINANCE Courses

**FIN 195. Topics. 3 Credits.**

Study of selected topics.

**FIN 210S. Personal Financial Literacy. 3 Credits.**

This is an introductory course dealing with various aspects of individual financial decision making, with an emphasis on short- and long-term personal financial planning. The course uses scenarios, practical cases, and special projects to provide concrete applications of abstract concepts. Prerequisite: MATH 102M or MATH 103M.

**FIN 317. Principles of Insurance and Risk Management. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: A declared major in the University or permission of the Dean's Office of the CBPA. Recommended elective for nonbusiness as well as business majors. The primary focus of this introductory course is on evaluating life, health, retirement, property, liability and personnel exposures to loss and analyzing the methods for managing these risks. Risk management and insurance techniques for dealing with potential losses to individuals and organizations will be emphasized.

**FIN 319. Principles of Real Estate. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: A declared major in the University or permission of the Dean's Office of the CBPA. The fundamentals of real estate productivity and value are developed. Legal elements of real estate transactions, physical aspects of real estate location and production, and economic factors pertinent to real estate.

**FIN 323. Introductory Financial Management. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: ACCT 201 or ACCT 226, ACCT 202 or ACCT 227, and ECON 202S, junior standing A declared major in the University or permission of the Dean's Office of the CBPA. Financial analysis, planning, and control in the business enterprise. An introduction to budgeting, problems in long- and short-term financing, sources of capital and financial markets.

**FIN 331. Legal Environment of Business. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: A declared major in the University or permission of the Dean's Office of the CBPA. Introduction to the legal environment of business, providing the student with an understanding of the nature of public law and the regulation of business and of the basic principles which control business practices.

**FIN 333. The Legal Environment of Electronic Commerce. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: FIN 331, and a declared major in the University or permission of the Dean's Office of the CBPA. This course will focus on the identification and management of legal issues and problems that confront businesses taking part in the rapidly growing internet economy. Issues will include the establishment and protection of an online identity, electronic contracting, libel, product and firm disparagement, and unfair consumer practices.

**FIN 367. Cooperative Education. 1-3 Credits.**

1-3 credits (may be repeated for credit). Prerequisite: approval by the department and Career Management in accordance with the policy for granting credit for Cooperative Education programs and a declared major in the University or permission of the Dean's Office of the CBPA. Available for pass/fail grading only. (qualifies as a CAP experience).

**FIN 368. Finance, Real Estate and Insurance Internship. 1-3 Credits.**

1-3 credits. Prerequisite: a declared major in the University or permission of the Dean's Office of the CBPA. A transfer student must have completed one semester at Old Dominion University. Student participation in a professional work experience. Approval for enrollment and allowable credits is determined by the Finance CAP advisor and the Career Management Center in the semester prior to enrollment. (qualifies as a CAP experience).

**FIN 369. Finance, Real Estate and Insurance Internship. 1-3 Credits.**

1-3 credits. Prerequisites: a declared major in the University or permission of the Dean's Office of the CBPA. A transfer student must have completed one semester at Old Dominion University. A faculty supervised, professionally oriented project. Approval for enrollment and allowable credits is determined by the Finance CAP advisor. (qualifies as a CAP experience).

**FIN 387. Honors: Introductory Financial Management. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: ACCT 201 or ACCT 226, ACCT 202 or ACCT 227, and ECON 202S and a declared major in the University or permission of the Dean's Office of the CBPA. A special honors section of FIN 323. Open only to students in the Honors Program in Business Administration.

**FIN 388. Honors: Legal Environment of Business. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: a declared major in the University or permission of the Dean's Office of the CBPA. A special honors section of FIN 331. Open only to students in the Honors Program in Business Administration.

**FIN 410. Life and Health Insurance. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: FIN 317 and a declared major in the University or permission of the Dean's Office of the CBPA. This course uses a broad-based financial planning approach in considering the nature and importance of individual life and health risks and uses of individual life and health insurance in treating these risks. The implications of various legal, tax, and accounting considerations on businesses and individuals are discussed. The course also provides an overview of the operational aspects of life insurers, including organization, underwriting, actuarial, reinsurance, marketing, investment, taxation, and accounting functions. Cases are employed.

**FIN 411. Employee Benefit Planning. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: FIN 317 and a declared major in the University or permission of the Dean's Office of the CBPA. This course considers the ability of group insurance and other private pooling mechanisms to alleviate the financial problems arising from death, disability, medical treatment and retirement. Primary emphasis on design, tax and administrative characteristics as they relate to employer-sponsored benefit programs.

**FIN 412. Property & Liability Insurance Company Operations. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: FIN 317 and a declared major in the University or permission of the Dean's Office of the CBPA. The course provides a broad overview of the operational activities and current problems of property and liability insurance companies, including organization, regulation, pricing, underwriting, claims, reinsurance, marketing, investment, and accounting functions. Through course projects, students will also investigate the major commercial property and liability exposures, including emerging exposures, and the risk transfer of these exposures through insurance.

**FIN 413. Risk Analysis and Control. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: FIN 317 or equivalent and a declared major in the University or permission of the Dean's Office of the CBPA. Recommended elective for nonbusiness as well as business majors. This course focuses on the risk analysis and control phases of the risk management process in business and governmental organizations. Particular attention is paid to the recognition, measurement, and treatment of pure risks, risk financing options other than commercial insurance, and decision making under conditions of uncertainty. Cases and computer analyses are employed.

**FIN 414. Estate Planning. 3 Credits.**

This course is designed to provide students with a background in the field of estate planning. Topics will include wills and trusts, the probate system, estate and gift taxation, and fiduciary income taxation. Prerequisites: ACCT 421 (or permission of instructor) and a declared major in the University or permission of the Dean's Office of the College of Business and Public Administration.

**FIN 415. Capstone in Financial Plan Development. 3 Credits.**

Lecture, 3 hours; 3 credits. Prerequisites: FIN 210S, FIN 317, FIN 411, FIN 431, and ACCT 421; and a declared major in the University or permission of the Dean's Office of the College of Business and Public Administration. Corequisite: FIN 414. This course is designed to provide students majoring in personal financial planning with the ability to integrate technical material from previous coursework and prepare a comprehensive financial plan. Emphasis will be on integrating knowledge, preparing a financial plan, and effectively communicating with a client. Case studies will be emphasized.

**FIN 431. Investments. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 323 with a grade of C or better and a declared major in the University or permission of the Dean's Office of the CBPA. This course develops the financial tools and knowledge needed to select among alternative financial assets. The emphasis is on the individual investor. Real world experience includes stock analysis, portfolio simulations and interactions with professionals in the securities industry. (qualifies as a CAP experience).

**FIN 432. Intermediate Financial Management. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 323 with a grade of C or better and junior standing. Theoretical framework relevant to decision making in financial management; capital budgeting, capital structure, cost of capital, and working capital management.

**FIN 433. Introduction to Futures and Options. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 323 with a grade of C or better and 431 and a declared major in the University or permission of the Dean's Office of the CBPA. An introduction to the understanding of futures and options. Basic features and trading mechanisms; valuation of financial derivatives; methods of managing financial risk; arbitrage techniques; and speculation strategies.

**FIN 434. Management of Financial Institutions. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: FIN 323 with a grade of C or better and a declared major in the University or permission of the Dean's Office of the CBPA. An examination of the objectives, functions, policies, organizational practices, and government regulations of financial institutions.

**FIN 435. International Financial Management. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 323 with a grade of C or better and a declared major in the University or permission of the Dean's Office of the CBPA. Financial decision making involving flow and funds across national boundaries.

**FIN 439. Financial Decision Making. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: FIN 432 with a grade of C or better and a declared major in the University or permission of the Dean's Office of the CBPA. Application of financial theory and techniques to the analysis and solution of actual financial problems. Case analysis.

**FIN 441. Student Managed Investment Fund. 3 Credits.**

This course is designed to provide students with experience managing an investment fund. The students will apply the theoretical knowledge of finance to manage a real portfolio. Prerequisites: FIN 431.

**FIN 443. Seminar in Insurance and Risk Management. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: FIN 317 and at least two courses from FIN 340, 410, 411, 412, and 413, and a declared major in the University or permission of the Dean's Office of the CBPA. This course is designed as a capstone course for students concentrating in risk management and insurance. The class will read and discuss recent works concerning advanced topics in risk management and insurance. Additionally, students will work individually and in groups on projects and presentations related to current risk management and insurance problems of national and international significance.

**FIN 450. Real Estate Finance. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 319 and FIN 323 or permission of the instructor, and a declared major in the University or permission of the Dean's Office of the CBPA. Explores the different financing and ownership arrangements used in real estate transactions.

**FIN 451. Real Estate Appraisal. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 319 and FIN 323 or permission of the instructor, and a declared major in the University or permission of the Dean's Office of the CBPA. Economic theories of value applied to real estate as a guide to business decisions.

**FIN 454. Real Estate Investment Analysis. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 319 and FIN 323 or permission of the instructor, and a declared major in the University or permission of the Dean's Office of the CBPA. Examination of developments in real estate valuation and investment with use of computer terminal models.

**FIN 497. Selected Topics in Finance. 3 Credits.**

3 credits. Prerequisite: permission of the department chair. For advanced students in financial management.

**FIN 498. Selected Topics in Real Estate. 3 Credits.**

3 credits. Prerequisite: permission of the department chair. For advanced students in real estate.

**FIN 499. Selected Topics in Insurance. 3 Credits.**

3 credits. Prerequisite: permission of the department chair. For advanced students in insurance.

## FL - Foreign Languages

### FOREIGN LANGUAGES Courses

**FL 195. Topics in Foreign Languages. 1-3 Credits.**

1-3 credits. A study of selected topics for elective credit. These courses will appear in the schedule booklet and will be more fully described in a booklet distributed to all academic advisors.

**FL 196. Topics in Foreign Languages. 1-3 Credits.**

1-3 credits. A study of selected topics for elective credit. These courses will appear in the schedule booklet and will be more fully described in a booklet distributed to all academic advisors.

**FL 369. Foreign Language Practicum. 3 Credits.**

3 credits. Prerequisites: nine credit hours of upper-level language at ODU, junior standing. Internships in private, public and business organizations that deal with foreign nationals, foreign products or are involved in teaching French, German or Spanish. (qualifies as a CAP experience).

**FL 452. Methods for Teaching Foreign Languages in Pre-K through Grade 12. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: admission to the teacher preparation program or licensure only program, a cumulative and major GPA of 2.75 with grades of C or higher, professional education GPA of 2.75 or higher with grades of C- or higher. Passing PRAXIS I scores, qualifying SAT or ACT scores, or passing PRAXIS I math and VCLA scores also required. Corequisite: FL 456. Taken in the fall semester preceding student teaching. A systematic approach to established and experimental methods of foreign language instruction.

**FL 456. Seminar in Foreign Language Teacher Education. 1 Credit.**

Hours to be arranged; 1 credit. Must be taken concurrently with FL 452. Prerequisite: passing scores on Praxis I and admission to the teacher education program. Students observe teachers in PreK-12 and may practice teaching methods under supervision. Preparation for Praxis II with passing scores required on Praxis II and VCLA and Advanced-low rating or higher on the ACTFL OPI. Available for pass/fail grading only. (qualifies as a CAP experience).

**FL 480W. Senior Seminar in International Studies. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: grade of C or better in ENGL 211C or 221C or 231C, senior standing in the BAIS degree program or permission of the instructor and the director of the BAIS program. Interdisciplinary research and the preparation of a senior thesis in international studies. (This is a writing intensive course.).

**FL 495/595. Topics in Foreign Languages. 1-3 Credits.**

1-3 credits each semester. Prerequisite: permission of the instructor. The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the schedule booklet and will be more fully described in a booklet distributed to all academic advisors.

**FL 497. Tutorial Work in Special Topics in Foreign Languages and Literatures. 1-6 Credits.**

1-6 credits. Prerequisite: appropriate survey course or permission by the instructor and chair. Independent readings and study on a topic to be selected under direction of professor.

**FL 498. Tutorial Work in Special Topics in Foreign Languages and Literatures. 1-6 Credits.**

1-6 credits. Prerequisite: appropriate survey course or permission by the instructor and chair. Independent readings and study on a topic to be selected under direction of professor.

## FLET - Foreign Literature in English Translation

### FOREIGN LITERATURE IN ENGLISH TRANSLATION Courses

**FLET 100L. Understanding World Literature. 3 Credits.**

Lecture 3 hours; 3 credits. This multicultural course introduces the student to the forms and meanings of poems, stories, novels, and plays from around the world. It provides students with the skills necessary for the appreciation and comparative analysis of these works both as literature and as representations of rich and diverse cultural values. A primary focus of the course will be the role of culture in the formation of national and individual identity, paying special attention to gender, sexuality, race, and class. All works will be read in English.

**FLET 307. Understanding European Film. 3 Credits.**

Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: junior standing or permission of instructor. This course provides students with an historic overview of films from a variety of European countries. Students will gain the vocabulary necessary to analyze individual films and for the comparative analysis of films from different cultural and historical contexts. The course will focus on issues such as national and individual identity, film as aesthetic form, gender and sexuality, and popular culture. (cross-listed with COMM 307).

**FLET 310. Japan: A Cultural Odyssey. 3 Credits.**

Lectures in English, films and slides, all readings, discussions, and lectures in English. Studies of novels, short stories, poems, and films produced by Japanese authors. Covers Japan's initial encounter with the West and the establishment of individual identity. No knowledge of Japanese necessary though some familiarity with Japanese history, art, and society would be helpful. (cross-listed with JAPN 310) Prerequisites: junior standing or permission of instructor.

**FLET 395. Topics in FLET. 3 Credits.**

This course will comprise an analysis of works of global literature translated into English. Our readings will stem from each continent, many nations, and at times the borders in between. We will consider ways in which literature is a shared space of conflict, reconciliation, and vision. Prerequisites: permission of the instructor.

**FLET 410/510. Berlin-Paris: Crucibles of European Ideas. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing, completion of the literature perspective, or permission of the instructor. This course explores the cultural movements that have characterized the German-French commonalities and differences from the early 1900s through the 1990s in cross-disciplinary discourses such as film, literature, art, politics, and economics.

**FLET 445/545. German Cinema. 3 Credits.**

Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: junior standing. This course will focus on the German cinema from perspectives such as fascism and its legacy, film as historical critique, or Weimar cinema. (Cross-listed with GER 445/545 and COMM 444/544).

**FLET 471/571. Hispanic Women Authors. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing, completion of the literary perspective, or permission of the instructor. A study of fictional and non-fictional works by Spanish, Spanish-American, and U.S. Latina writers from the 16th to the 20th century. The course analyzes gender identity and roles and the interaction of gender, race, and class in literary representations of courtship and marriage, spirituality, nationalism, colonialism, and multiculturalism.

**FLET 476/576. German-Jewish Literature and Culture. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. A survey of seminal texts by German-Jewish authors from the Enlightenment to the present day, including figures such as Marx, Kafka, Freud, Schnitzler and Arendt. Taught in English. (cross-listed with GER 476/576).

**FLET 495/595. Topics in Foreign Literature in English Translation. 1-3 Credits.**

1-3 credits each semester. Prerequisite: junior standing, completion of the literary perspective, or permission of the instructor. The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**FLET 496/596. Topics in Foreign Literature in English Translation. 1-3 Credits.**

1-3 credits each semester. Prerequisite: junior standing, completion of the literary perspective, or permission of the instructor. The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

## FR - French

### FRENCH Courses

**FR 101F. Beginning French I. 3 Credits.**

101F or satisfactory score on the placement exam is prerequisite to 102F. Lecture 3 hours; 3 credits each semester. Aural comprehension, oral drill and discussion of grammar principles, written exercises, and reading assignments.

**FR 102F. Beginning French II. 3 Credits.**

101F or satisfactory score on the placement exam is prerequisite to 102F. Lecture 3 hours; 3 credits each semester. Aural comprehension, oral drill and discussion of grammar principles, written exercises, and reading assignments.

**FR 195. Topics in French. 1-3 Credits.**

1-3 credits each semester. Prerequisite: none. A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**FR 196. Topics in French. 1-3 Credits.**

1-3 credits each semester. Prerequisite: none. A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**FR 201. Intermediate French I. 3 Credits.**

Graded readings with grammar review. Emphasis on civilization and culture, also on speaking and listening competency. Prerequisites: FR 102F or satisfactory score on the placement exam.

**FR 202. Intermediate French II. 3 Credits.**

Graded readings with grammar review. Emphasis on civilization and culture and also speaking and listening. Prerequisites: FR 201 or satisfactory score on the placement exam.

**FR 295. Topics in French. 1-3 Credits.**

1-3 credits each semester. Prerequisite: none. A study of selected topics designed as electives for nonmajors. These courses will appear in the course schedule, and will be more fully described in a booklet distributed to all academic advisors.

**FR 296. Topics in French. 1-3 Credits.**

1-3 credits each semester. Prerequisite: none. A study of selected topics designed as electives for nonmajors. These courses will appear in the course schedule, and will be more fully described in a booklet distributed to all academic advisors.

**FR 311. Communicative Competence: Speaking and Listening. 3 Credits.**

(oral communication course) Lecture 3 hours; 3 credits. Prerequisite: FR 202 or advanced placement. A study of task-oriented communication strategies enabling students to become full conversational partners.

**FR 312W. Communicative Competence: Writing and Reading. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: a grade of C or better in ENGL 211C, ENGL 221C or ENGL 231C, passing score on the Writing Sample Placement Test and FR 202 or advanced placement. A functional approach to reading and writing enabling students to understand content, style, audience and organization. (This is a writing intensive course.).

**FR 320. Contemporary France through the Media. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: FR 202 or advanced placement. This course introduces students to social, political, economic, intellectual and artistic manifestations of French culture today, and also provides a day-by-day analysis of contemporary France by reading current newspapers, magazines, watching French news broadcasts and tapping into Internet resources.

**FR 331. French Literary Forms: Prose. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: FR 202 or advanced placement. A study of the novel and other prose genres in francophone literature with representative works from various periods and national origins.

**FR 332. French Literary Forms: Theatre. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: FR 202 or advanced placement. A study of the theater in francophone literature with representative works from the various periods and national origins.

**FR 333. French Literary Forms: Poetry. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: FR 202 or advanced placement. This course will introduce students to a wide sampling of different styles and periods from the Middle Ages to today. Students will learn different ways of approaching French poetry (the traditional explication de texte; understanding cultural contexts); rules of versification, and how to write about French poetry critically and creatively.

**FR 366. Business French: Language and Culture. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: FR 202 or advanced placement. Presents aspects of French business life: banking, publicity, commerce, insurance, accounting, import-export, taxes, etc.

**FR 369. Practicum. 1-3 Credits.**

1-3 credits. Prerequisite: nine credit hours at the 300 or 400 level. Internships in private, public and business organizations that deal with foreign nationals, foreign products or are involved in teaching French. (qualifies as a CAP experience).

**FR 395. Topics in French. 1-3 Credits.**

A study of selected topics designed for non-majors, or for elective credit within a major. These courses will appear in the course schedule and will be more fully described by academic advisors. Prerequisites: FR 202 or advanced placement test.

**FR 396. Topics in French. 1-3 Credits.**

A study of selected topics designed for non-majors, or for elective credit within a major. These courses will appear in the course schedule and will be more fully described by academic advisors. Prerequisites: FR 202 or advanced placement test.

**FR 407/507. Advanced Grammar and Syntax. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: FR 312W or permission of the department chair. An intensive study of French grammar and development of style through activities, including theme, version, composition, and dictation.

**FR 410/510. Berlin and Paris: Crucibles of European Ideas. 3 Credits.**

This course explores the cultural movements that have characterized the German-French commonalities and differences from the early 1900s through the 1990s in cross-disciplinary discourses such as film, literature, art, politics, and economics. Cross-listed with FLET 410/510. Prerequisites: German and French students must read and write in the target language. Pre- or corequisite: FR 311 or FR 312W.

**FR 415/515. Applied Phonetics. 3 Credits.**

Designed to develop the mastery of spoken French. Intensive study of French phonetics with exercises in pronunciation and its application to media comprehension. Prerequisites: FR 311 or FR 312W or permission of the instructor.

**FR 420/520. Francophone Civilization. 3 Credits.**

A study of the culture and civilization of selected Francophone countries, the Magreb, West Africa, La Republique Malgache, the Caribbean Islands, Canada, Belgium, and Switzerland, through cultural readings, art, music and literature. Prerequisites: FR 311, FR 312W or FR 320 or the instructor's permission.

**FR 427/527. Studies in Seventeenth-Century French Literature. 3 Credits.**

Following a preparatory period, the political stability of the French monarchy ushers in the golden age of classicism. Representative works from comic and dramatic theater, philosophy, poetry and the evolving novel. Prerequisites: FR 311, FR 312W, or FR 320 or permission of the instructor.

**FR 428/528. Studies in Eighteenth-Century French Literature. 3 Credits.**

A study of the two main currents of ideas of the Age of Reason or Enlightenment; the rationalistic drive to question established authority, exemplified by the 'Encyclopedie' and leading to the Revolution of 1789; and the Rousseauistic return to nature and emotivity. Representative readings. Prerequisites: FR 311, FR 312W, FR 320 or permission of the instructor.

**FR 437/537. Studies in Nineteenth-Century French Literature. 3 Credits.**

A study of the post-Revolutionary (1789) literary movements: Romanticism, Realism, Naturalism, Symbolism, which opened new horizons of modern science and culture in France. Representative works. Prerequisite: FR 311, FR 312W, FR 320 or permission of the instructor.

**FR 438/538. Studies in Twentieth-Century French Literature. 3 Credits.**

Prerequisites: FR 311, FR 312W, FR 320, or permission of the instructor. A survey of representative works and movements in 20th century French and Francophone literature.

**FR 469/569. A History of French Cinema. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: FR 311 or 312W or permission of instructor. This course will function as a survey of French film classics from the birth of cinema through contemporary times, and also shed light on various French cultural and literary movements as they are represented in film (Surrealism, WWII, Nouvelle Vague, decolonization).

**FR 495/595. Topics in French. 1-3 Credits.**

The advanced study of the selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule and will be more fully described in information distributed to all academic advisors. Prerequisites: FR 311, FR 312W, FR 320 or permission of the instructor.

**FR 496/596. Topics in French. 1-3 Credits.**

The advanced study of the selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule and will be more fully described by academic advisors. Prerequisites: FR 311, FR 312W, FR 320 or permission of the instructor.

**FR 497. Tutorial Work in Special Topics in French. 1-3 Credits.**

1-3 credits each semester. Prerequisites: senior standing and approval of department chair. Independent reading and study on topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

**FR 498. Tutorial Work in Special Topics in French. 1-3 Credits.**

1-3 credits each semester. Prerequisites: senior standing and approval of department chair. Independent reading and study on topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

# GEOG - Geography

## GEOGRAPHY Courses

**GEOG 100S. Cultural Geography. 3 Credits.**

This course provides a basic topical introduction to human and cultural geography. It focuses on the diversity of human societies, their distribution, characteristics, and cultural impact on the landscape. Topics include the geography of population, migration, language, religion, economic development, urbanization, resources, and the political landscape.

**GEOG 101S. Environmental Geography. 3 Credits.**

A geographical study of the diverse characteristics of the Earth's physical landscape, spatial distribution of environmental characteristics, the impacts of these on human populations and human populations' impact on the natural environment. Topics include climate and climate change, mass movements and natural hazards, biogeography and environmental problems such as desertification and deforestation, and the use and abuse of water resources.

**GEOG 126S. Honors: Cultural Geography. 3 Credits.**

Open only to students in the Honors College. A special honors section of GEOG 100S.

**GEOG 250. World Regional Geography. 3 Credits.**

A study of the physical and cultural characteristics of the major geographical regions of the world. The course focuses upon significant problems within each of the world's major regions and examines the relevance of the geographical background to these problems.

**GEOG 295. Topics in Geography. 3 Credits.**

A study of selective topics in Geography.

**GEOG 296. Topics in Geography. 3 Credits.**

A study of selective topics in Geography.

**GEOG 300. Maps and Geographic Information. 3 Credits.**

An investigation of different representations of the Earth: physical and cognitive maps, atlases, spatial databases, aerial photographs, and remote sensing imagery, with an emphasis on the use of geographic tools for communicating and analyzing information. Prerequisites: GEOG 100S or GEOG 101S.

**GEOG 305. World Resources. 3 Credits.**

A geographical analysis of the distribution and accessibility of the world's resources including population, agricultural land, biodiversity, water, renewable and nonrenewable materials, and energy sources. Prerequisites: GEOG 100S or GEOG 101S, or permission of the instructor.

**GEOG 306T. Hazards: Natural and Technological. 3 Credits.**

An exploration of human perceptions of and responses to extreme geophysical and technological threats, including nuclear bombs and accidents, hurricanes, tornadoes, earthquakes, and volcanoes. Prerequisites: junior standing and six credits in the social sciences or permission of the instructor.

**GEOG 308. Research Design. 3 Credits.**

Covers the design and implementation of quantitative and qualitative methods of inquiry in social sciences. Prerequisites: GEOG 100S or GEOG 101S.

**GEOG 310. Geography of the City. 3 Credits.**

An analysis of the structure, growth, and development of cities. Topics include the use of urban land, location of public services, structure of the urban economy, social problems of urban populations, and decay and revitalization. Prerequisites: Completion of General Education human behavior requirement.

**GEOG 320. Political Geography. 3 Credits.**

A study of the relationship between geographical and political factors; the nation state and its subdivisions; interaction among states; and the political geography of everyday life. Prerequisites: Completion of General Education human behavior requirement.

**GEOG 321. World Economic Geography. 3 Credits.**

An analysis of differences in spatial patterns on the economic landscape at national and international levels, and the processes which create such differences. Introduces basic concepts, theories, and models in economic geography at the global scale. Prerequisites: GEOG 100S or 101S, or permission of the instructor.

**GEOG 325. Ethnic Minorities. 3 Credits.**

A study of ethnic minorities worldwide with emphasis on geographical dimensions of ethnic identity and relationships between ethnicity and territory, regionalism, politics, and cultural expression. Prerequisites: Sophomore standing or permission of the instructor.

**GEOG 330. Field Methods. 3 Credits.**

A review of selected techniques for generating data in a field situation. Lectures deal with the description and evaluation of techniques such as sampling methods, observation, interviewing, questionnaires, human relations skills and ethical considerations. The project component involves the definition of field problems and the application of appropriate techniques. Prerequisites: Sophomore standing or permission of the instructor.

**GEOG 350. Geography of the United States and Canada. 3 Credits.**

The human and physical geography of the United States and Canada with special emphasis on the distribution of population and natural resources, migration patterns, location of major economic activities, and the variety of regional identities within the U.S. and Canada. Prerequisites: Junior standing and six credits in human behavior, or permission of the instructor.

**GEOG 355. Topics in Regional Geography. 3 Credits.**

A study of selected regions or selected problems within a particular region of the world. Prerequisites: Junior standing or permission of the instructor.

**GEOG 367. Cooperative Education. 1-3 Credits.**

Student participation for credit based on the academic relevance of the work experience, criteria and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place. (Qualifies as a CAP experience.) Prerequisites: Approval by the department and Career Management.

**GEOG 368. Internship in Geography. 1-12 Credits.**

Individualized practical experience in the area of applied geography. The credits will be commensurate with the level of the student's involvement. (Qualifies as a CAP experience.) Prerequisites: Twelve hours in geography.

**GEOG 395. Topics in Geography. 1-4 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule and will be more fully described in information distributed to all academic advisors. Prerequisites: Junior standing or permission of the instructor.

**GEOG 396. Topics in Geography. 1-4 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule and will be more fully described in information distributed to all academic advisors. Prerequisites: Junior standing or permission of the instructor.

**GEOG 398. Tutorial Work in Geography. 1-3 Credits.**

Independent study under the direction of an instructor. Prerequisites: Permission of the instructor.

**GEOG 400W/500. Seminar in Geography. 3 Credits.**

Advanced study of a specialized topic in geography. The choice of the topic may vary according to the availability of faculty expertise and student interest. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; GEOG 100S or GEOG 101S, or permission of the instructor.

**GEOG 402/502. Geographic Information Systems. 3 Credits.**

A study of the conceptual basis of GIS as a tool for manipulating spatial information. The course focuses on how geographic information can be input and organized within the framework of a GIS. Students will work on a computer-based GIS to gain a greater understanding of spatial database structures and analytical operations. Prerequisites: Junior standing or permission of instructor.

**GEOG 404/504. Digital Techniques for Remote Sensing. 3 Credits.**

Study of the theory and application of remote sensing, emphasizing environmental applications and aerial and satellite imagery. Covers the fundamentals of multispectral digital image processing, including sensors pre-processing, enhancement, classification, accuracy assessment, and GIS data integration. Prerequisites: Junior standing or permission of instructor.

**GEOG 405/505. Seminar in International Resource Management. 3 Credits.**

Discussion of the ecological and management principles underlying international resource management and the goal of attaining a sustainable, ecologically balanced world. Prerequisites: GEOG 100S or GEOG 101S; GEOG 305 recommended.

**GEOG 408/508. Cartography. 3 Credits.**

Computer-assisted methods and techniques employed in the design, construction, and use of maps and other graphics as tools for data analysis and communication. Prerequisites: GEOG 300 or GEOG 402.

**GEOG 410/510. Seminar in Urban Geography. 3 Credits.**

Discussion of specific urban and metropolitan problems based on outside readings and individually selected research topics. Prerequisites: GEOG 100S or 101S, or permission of the instructor.

**GEOG 411/511. Urban and Regional Planning. 3 Credits.**

A study of planning concepts and powers used to guide contemporary metropolitan growth and development. Emphasis is on the application of social science principles and methods to the planning process. Prerequisites: GEOG 100S or 101S, or permission of the instructor.

**GEOG 412/512. Cities of the World. 3 Credits.**

An examination of cities of the world's major cultural realms with an emphasis on the urban landscape as it varies between developed and developing countries. Prerequisites: Junior standing or permission of the instructor.

**GEOG 418. Quantitative Methods. 3 Credits.**

A survey of and practicum in the basic techniques of quantitative research, including the logic of empirical research, the identification of data sources, and the use of appropriate statistical techniques. Prerequisites: GEOG 100S or GEOG 101S, GEOG 308 with a grade of C- or better. Pre- or corequisite: STAT 130M with a grade of C- or better.

**GEOG 419/519. Spatial Analysis of Coastal Environments. 3 Credits.**

The course integrates remotely sensed and field techniques for scientific investigation and practical management of coastal environmental systems. Spatial modeling of coastal processes and management tools using Geographic Information System (GIS). Prerequisites: GEOG 404 or permission of the instructor.

**GEOG 420/520. Marine Geography. 3 Credits.**

An analysis of human-sea relationships with particular emphasis on resource management and political organization from global, regional, and national perspectives. Prerequisites: Junior standing and six credits in human behavior, or permission of the instructor.

**GEOG 422W/522. Coastal Geography. 3 Credits.**

An examination of the physical and human geography of the coastal zone. Considers problems of managing coastal resources with an emphasis on North America. Lectures focus on coastal patterns, processes, and problems at the global, national, and local scales. Students investigate a section of the local coastline and write a report on the physical and human geography on the basis of field study, library, and internet research. (This is a writing intensive course.) Prerequisites: GEOG 100S or 101S, a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, or permission of the instructor.

**GEOG 425/525. Internet Geographic Information Systems. 3 Credits.**

Theoretical and practical exploration of methods, standards, and policies related to the development and utilization of geographic information systems on the Internet. Students will create and utilize distributed geospatial data and analytical systems using the WWW and the Internet to address geographical problems. Prerequisites: GEOG 402.



**GEOG 432/532. Advanced GIS. 3 Credits.**

The study of a series of advanced topics in the field of geographic information systems/science. Focus is placed on the development of projects/models and a survey of several advanced techniques. Students will work on a computer based GIS to implement topics from lectures. Prerequisites: GEOG 402.

**GEOG 451/551. Europe. 3 Credits.**

A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in Europe. Prerequisites: Junior standing and GEOG 100S or 101S, or permission of the instructor.

**GEOG 452/552. Africa. 3 Credits.**

A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in Africa. Prerequisites: Junior standing and GEOG 100S or 101S, or permission of the instructor.

**GEOG 453/553. Asia. 3 Credits.**

A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in Asia excluding the Middle East and the former USSR. Prerequisites: Junior standing and GEOG 100S or 101S, or permission of the instructor.

**GEOG 454W/554. Latin America. 3 Credits.**

A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in Latin America. (This is a writing intensive course.) Prerequisites: Junior standing, GEOG 100S or 101S, a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, or permission of the instructor.

**GEOG 455/555. The Middle East. 3 Credits.**

A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in the Middle East. Prerequisites: Junior standing and GEOG 100S or GEOG 101S, or permission of the instructor.

**GEOG 456/556. Geography of Southeast Asia. 3 Credits.**

Analysis of the physical, historical, cultural, economic, environmental, and political patterns and problems of Southeast Asia. The focus is on the diversity of the region and on the nature and impact of development. Prerequisites: GEOG 100S.

**GEOG 458/558. Geography of Virginia. 3 Credits.**

An analysis of Virginia's population, resources, and regional landscapes as they have been influenced by physical, cultural, historical, and economic factors. Prerequisites: GEOG 100S or GEOG 101S.

**GEOG 480W. Senior Seminar in International Studies. 3 Credits.**

Interdisciplinary research and the preparation of a senior thesis in international studies. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, senior standing in the BAIS degree program or permission of the instructor.

**GEOG 490/590. Applied Cartography/GIS. 1-3 Credits.**

Practical experience in applying the principles of cartography and geographical information systems to the design and construction of maps and other graphics. Prerequisites: Junior standing or permission of the instructor.

**GEOG 495/595. Topics in Geography. 1-4 Credits.**

The advanced study of selected topics which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisites: Appropriate survey course or permission of the instructor.

**GEOG 496/596. Topics in Geography. 1-4 Credits.**

The advanced study of selected topics which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisites: Appropriate survey course or permission of the instructor.

**GEOG 497/597. Independent Research in Geography. 1-3 Credits.**

Independent reading and study on a topic to be selected under the direction of the instructor. Conferences and papers as appropriate. Prerequisites: Senior standing and approval of the director of geography.

**GEOG 498/598. Tutorial Work in Geography. 1-3 Credits.**

Independent study under the direction of an instructor. Prerequisites: Permission of instructor.

**GEOG 499. Senior Thesis. 3 Credits.**

Completion of a research paper supervised by a faculty member from the Geography program. Research topic to be selected in concert with the faculty supervisor and a final written report required. Prerequisites: GEOG 308 and senior standing in Geography.

## GER - German

### GERMAN Courses

**GER 101F. Beginning German I. 3 Credits.**

101F is prerequisite to 102F. Lecture 3 hours; 3 credits each semester. Aural comprehension, oral drill and discussion of grammar principles, written exercises, and reading assignments.

**GER 102F. Beginning German II. 3 Credits.**

101F is prerequisite to 102F. Lecture 3 hours; 3 credits each semester. Aural comprehension, oral drill and discussion of grammar principles, written exercises, and reading assignments.

**GER 195. Topics in German. 1-3 Credits.**

1-3 credits each semester. Prerequisite: none. A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**GER 196. Topics in German. 1-3 Credits.**

1-3 credits each semester. Prerequisite: none. A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**GER 201. Intermediate German I. 3 Credits.**

201 is prerequisite to 202. Lecture 3 hours; 3 credits each semester. Prerequisite: GER 102F or satisfactory score on the placement test. An introduction to German grammar, literature and civilization.

**GER 202. Intermediate German II. 3 Credits.**

201 is prerequisite to 202. Lecture 3 hours; 3 credits each semester. Prerequisite: GER 102F or satisfactory score on the placement test. An introduction to German grammar, literature and civilization.

**GER 295. Topics in German. 1-3 Credits.**

1-3 credits each semester. Prerequisite: none. A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**GER 296. Topics in German. 1-3 Credits.**

1-3 credits each semester. Prerequisite: none. A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**GER 311. Communicative Competence: Speaking and Listening. 3 Credits.**

(oral communication course) Lecture 3 hours; 3 credits. Prerequisite: GER 202 or or advanced placement. Development of speaking and listening skills using a variety of task-oriented strategies enabling students to become full conversational partners.

**GER 312W. Communicative Competence: Writing and Reading. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: a grade of C or better in ENGL 211C, ENGL 221C or ENGL 231C, passing score on the Writing Sample Placement Test and GER 202, advanced placement or permission of the instructor. A functional approach to the development of reading and writing skills targeting a variety of subjects, styles, and audiences. (This is a writing intensive course.).

**GER 321. German Civilization from the Middle Ages to World War I. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: GER 311 or 312W. A study of the major developments of German culture, highlighting its contributions to the modern culture of Western Civilization. Examples include the 'German-Jewish Symbiosis' of the enlightenment, German Classicism (Goethe, Humboldt and their humanistic ideals), German Romanticism (music, poetry, 'Lieder'), the German Gothic (the 'uncanny' and its influence on the Western imagination from E.A. Poe to Baudelaire and Hollywood cinema), German philosophy, Vienna 1900 ('Art nouveau,' psychoanalysis), and German Expressionism (poetry, painting and the utopian imaginary).

**GER 350. Modern Swiss German Literature: A Multicultural Model. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: GER 311 or 312W or permission of the instructor. Readings and discussions of selected master works by Frisch and Durrenmatt, the two literary giants of modern Swiss culture. Topic include the multicultural aspects of modern Switzerland, the dialectics of myth and modernity, provincialism versus globalism, Old World versus New World, the mixed blessing of technology, as well as the discourses of gender ideology.

**GER 355. The City as Cultural Focus. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: GER 311 or 312W or permission of the instructor. This course will focus on a particular German city such as Berlin, Vienna, or Munich in light of historical and cultural shifts and continuities. Students will read literary and historical texts, poetry and newspaper articles and screen films.

**GER 366. Business German: Language and Culture. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: GER 311 or 312W or permission of the instructor. An advanced language course focusing on practical vocabulary building, grammar, and cultural information for career and business-related situations.

**GER 378. Extracurricular Studies. 1-3 Credits.**

**GER 380. German Literature from Sturm und Drang to Jugendstil. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: GER 311 or 312W. The course will cover representative literary works from Weimar Classicism to the literature of 1900, such as Goethe, Eichendorff, Buchner, Heine, Nietzsche, Rilke, et al.

**GER 395. Topics in German. 1-3 Credits.**

1-3 credits each semester. Prerequisite: GER 202 or the equivalent. A study of selected topics designed for non-majors, or for elective credit within a major. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**GER 396. Topics in German. 1-3 Credits.**

1-3 credits each semester. Prerequisite: GER 202 or the equivalent. A study of selected topics designed for non-majors, or for elective credit within a major. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**GER 407/507. Advanced Grammar and Syntax. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: GER 311 and 312W, or permission of the department chair. This course deals with idioms and the fine points of grammar with the aim of helping students to develop a good style in written and spoken German. After a short introduction to pronunciation, special problems of non-native speakers are analyzed and treated individually.

**GER 408/508. Conversation and Composition. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: GER 311 and 312W, or permission of the department chair. Designed to develop the mastery of spoken and written German. Recommended for prospective teachers.

**GER 410/510. Berlin and Paris: Crucibles of European Ideas. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: German and French students must read and write in the target language. This course explores the cultural movements that have characterized the German-French commonalities and differences from the early 1900s through the 1990s in cross-disciplinary discourses such as film, literature, art, politics, and economics. Cross-listed with FLET 410/510.

**GER 420/520. Masterpieces of German Poetry. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: GER 311 and 312W, or permission of instructor. The course will focus on exemplary poems of distinct cultural periods, ranging from the courtly love tradition of the Middle Ages to the political poetry surrounding the fall of the Berlin Wall.

**GER 445/545. German Cinema. 3 Credits.**

Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: GER 311 or 312W or permission of instructor. This course will focus on the German cinema from perspectives such as fascism and its legacy, film as historical critique, or Weimar cinema. (Cross-listed with FLET 445/545 and COMM 444/544).

**GER 450/550. German Satires and Parodies. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: GER 311 and 312W, or permission of instructor. The course will analyze satirical features and parodic strategies in exemplary literature and visual texts from late medieval carnival plays to contemporary cabaret. Texts include excerpts from Brant's Ship of Fools, examples of romantic irony in Bonaventura and Heine, the graphic art of caricature from Reformation broad sheets to today's political cartoons, as well as literary parodies from Wagnerian opera to Viennese chanson.

**GER 455/555. Germany 1900-1945: From High Culture to Holocaust. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: GER 311 and 312W. A study of representative works from the last years of the Austro-Hungarian Empire, the Wilhelmine Empire and the Weimar Republic, including Freud, Hofmannsthal, Kafka, Brecht, Hesse, Thomas Mann et al. The course will also discuss literature illustrating the genesis and ideology of the Third Reich.

**GER 470/570. Post World War II Germany. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: GER 311 or 312W. The course will cover representative literary texts and cultural events of divided and united Germany, including Heinrich Boll, Gunter Grass, Max Frisch, Christa Wolf, Doris Dorrie et al, as well as film, painting, popular music, the culture of memory and German Jewish relations after the Shoah.

**GER 473/573. The Enlightenment and Its Critics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: GER 311 or 312W. This course focuses on German intellectual history as represented by thinkers such as Lessing, Kant, Hegel, Marx, Nietzsche, and Freud. More recent works by Frankfurt School writers Adorno and Horkheimer represent critical engagements with the tenets of the European Enlightenment.

**GER 476/576. German-Jewish Literature and Culture. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. A survey of seminal texts by German-Jewish authors from the Enlightenment to the present day, including figures such as Marx, Kafka, Freud, Schnitzler and Arendt. (cross-listed with FLET 476/576).

**GER 478/578. German Drama. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: GER 311 and 312W. An exploration of German dramatic works ranging from the Enlightenment period to contemporary drama. Students will read individual works by authors such as Lessing, Goethe, Schiller, Hebbel, Brecht, or Jelinek as well as texts concerned with the function of drama in German culture by these and other authors.

**GER 495/595. Topics in German. 1-3 Credits.**

1-3 credits each semester. Prerequisite: appropriate survey course or permission of the instructor. The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**GER 496/596. Topics in German. 1-3 Credits.**

1-3 credits each semester. Prerequisite: appropriate survey course or permission of the instructor. The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**GER 497. Tutorial Work in Special Topics in German. 1-3 Credits.**  
1-3 credits each semester. Prerequisites: senior standing and approval of the department chair. Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

**GER 498. Tutorial Work in Special Topics in German. 1-3 Credits.**  
1-3 credits each semester. Prerequisites: senior standing and approval of the department chair. Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

## HE - Health Education

### HEALTH EDUCATION Courses

**HE 230. Personal and Community Health. 3 Credits.**  
This course is designed to develop knowledge, understanding, attitudes, and desirable practices related to personal and community health.

**HE 324. Teaching Injury Care for Sports. 3 Credits.**  
This course presents the knowledge, skills, and teaching techniques essential for proper care in emergency and sport injury situations. Aspects of emergency first aid, sport specific injury recognition and care, and CPR will be covered. Upon satisfactory completion of the course and payment of certification fees, students will receive a 2-year certification in first aid and CPR. Students will have the option of taking the sports first aid certification test from ASEP for coaching. Prerequisites: Junior standing.

**HE 402/502. Methods and Materials in Health Education. 3 Credits.**  
Instruction in methods of teaching, organization of classes, evaluation of outcomes, and selection of content for health and safety education. Collection, evaluation, and application of health and safety education materials are emphasized. This course is to be completed prior to student teaching. Field experience is required. Prerequisites: junior standing.

**HE 481/581. Teaching Sexuality Education in Schools. 3 Credits.**  
This course is concerned with suitable methods and materials for use in teaching sex education in the home, community, and school setting. A family living element is in the program. Prerequisites: PE 300 and junior standing.

**HE 497/597. Topics in Health Education. 1-3 Credits.**  
This course provides an opportunity for in-depth study of selected topics in the variety of areas constituting health education. Prerequisites: junior standing.

**HE 498/598. Topics in Health Education. 1-3 Credits.**  
This course provides an opportunity for in-depth study of selected topics in the variety of areas constituting health education. Prerequisites: junior standing.

## HEBR - Hebrew

### HEBREW Courses

**HEBR 111F. Beginning Hebrew I. 6 Credits.**  
Lecture 6 hours; 6 credits. Aural comprehension, oral drill and discussion of grammar principles, written exercises and reading assignments.

**HEBR 212. Intermediate Hebrew. 6 Credits.**  
Lecture 6 hours; 6 credits. Prerequisite: HEBR 111F or permission of the instructor. Oral drill and discussion of grammar principles, written exercises and reading assignments.

## HIST - History

### HISTORY Courses

**HIST 100H. Interpreting the World Past Since 1500. 3 Credits.**  
The course offers students a critical approach to interpreting World history. A fast-paced survey of World history from 1500 to the present, it focuses on the major intellectual, religious, social, cultural, political, environmental and scientific developments that have influenced the course of World history. It looks at cross-cultural relations in the form of economic exchange, technology transfer, war and conquest, and international organizations.

**HIST 101H. Interpreting the Asian Past. 3 Credits.**  
The course is a fast-paced survey of Asian civilization in a global context from the emergence of Indian and Chinese civilizations to the events unfolding today. It follows the courses of political, social, cultural, religious, and economic development in East, South, and Southeast Asia.

**HIST 102H. Interpreting the European Past. 3 Credits.**  
The course is a fast-paced survey of European civilization. It focuses on the major intellectual, religious, social, cultural, political, environmental, and scientific developments that have influenced the course of European history.

**HIST 103H. Interpreting the Latin America Past. 3 Credits.**  
This fast-paced survey covers the last 600 years in the political, social, economic, and cultural histories of Latin America. Special attention will be paid to the global context of this multi-ethnic and multi-lingual region.

**HIST 104H. Interpreting the American Past. 3 Credits.**  
This course offers students a critical approach to interpreting the history of the United States. A fast-paced survey of American history from the era of colonization to the present, it focuses on the major intellectual, religious, social, cultural, political, environmental, and scientific developments that have influenced the development of the United States.

**HIST 105H. Interpreting the African Past. 3 Credits.**  
This course offers students a critical approach to interpreting the history of Africa. A fast-paced survey of African history, it affords students a grounding in the major themes of African history. The course focuses on the major economic, social, and political institutions of Africa, past and present, and explores how historical developments assist comprehension of present-day Africa.

**HIST 126H. Honors: Interpreting the American Past. 3 Credits.**  
The course is open only to students in the Honors College. Special honors section of HIST 104H.

**HIST 127H. Honors: Interpreting the European Past. 3 Credits.**  
The course is open only to students in the Honors College. Special honors section of HIST 102H.

**HIST 201. Introduction to Historical Methods. 3 Credits.**  
Required of all history and secondary education social studies majors. Recommended prior to upper-division course work. Examines methods of historical research and primary and secondary source analysis, inclusive of internet usage. Explores historiography and historical writing. Introduces students to issues in the philosophy of history. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H.

**HIST 300T. The History of Sex and Sexual and Reproductive Technologies. 3 Credits.**  
The course explores the many ways sex, gender, sexuality and sexual identities have been constructed in Western thought from 1250 to the present. The medicalization of sex and sexual practices will be examined. Sexual perversions such as prostitution, pornography, and sexual violence will be explored. The course will also focus on the technology of sexual enhancement and reproductive technologies and the ethics involved in these areas. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 302. Perspectives in Teaching World History to 1500. 3 Credits.**  
The course gives students a critical perspective on world civilizations from prehistory to 1500. It focuses on the major cultural, intellectual, scientific, geographic/environmental and religious developments of the world. The course emphasizes the critical assessment of primary documents and artifacts and the utilization of that material in the classroom. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 304T. History of Medicine, Disease, and Health Technology. 3 Credits.**  
Examines the history of medicine and epidemiology from ancient times through the twenty-first century. The course takes a comparative look at medical practices in Europe and around the globe and focuses heavily on the complex relationship between human societies and disease. The development of medical technologies and their impact are examined. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 305. Ancient Greece. 3 Credits.**

The history of Greece from the Bronze Age to the Hellenistic era. Special attention will be paid to the Persian and Peloponnesian Wars, the Golden Age of Athens, and the life of Alexander the Great. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 306. Ancient Rome. 3 Credits.**

The history of Rome from its foundation in 753 B.C. down to its fall in 476 A.D. Special attention will be placed on constitutional developments in the Republican period, the career of Augustus, and the strengths and failings of the Empire. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 307. The Early Middle Ages. 3 Credits.**

Examines late Roman and barbarian Europe from the time of the Hunnic migrations through the Carolingian era. Primary emphasis will be on the social, cultural, economic, and political development of the various continental barbarian states. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 308. The High Middle Ages. 3 Credits.**

This is a study of continental Medieval Europe from the later Carolingians through Dante. Primary emphasis will be placed on the social, cultural, economic, and religious aspects of medieval society. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 310. Renaissance Europe. 3 Credits.**

This is an examination of the Renaissance in both Italy and Northern Europe from the 14th to the 16th centuries emphasizing the new learning, humanism and the place of the individual as well as the political and artistic new achievements of the age. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 311. Early Modern Europe. 3 Credits.**

The course covers the period between the late Middle Ages and the beginning of the modern era, roughly 1350-1715, exploring the Renaissance, the Reformation, and the Age of Exploration. There is emphasis on the culture of the period as contemporaries coped with depression, plague, religious change, and cultural encounters outside Europe. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 314T. Towers, Tanks and Time: Technology on the Eve of WWI. 3 Credits.**

The course traces the intellectual, technical, mechanical, and scientific developments that had a profound effect on the ways in which Europeans and Americans saw and understood their world 1890-1914. Course readings and materials will reflect on the process and progress of technological change and the ways in which this manifested in literature, arts, politics, and culture. Prerequisites: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, HIST 126H OR HIST 127H.

**HIST 316. Cold War in History. 3 Credits.**

The course explores changes in the international system which arose in the wake of World War II and focuses on conflict and cooperation in selected regions of the developed and developing world. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H.

**HIST 322. History of England Through the Seventeenth Century. 3 Credits.**

This course explores the social and political history of early England, with an emphasis on the fall of the Romans, the Anglo-Saxon and Norman invasions, medieval social and cultural life, the evolution of feudal relationships, and the development of the English monarchy. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H.

**HIST 323. History of Modern England. 3 Credits.**

This course explores the development of Britain in the 18th, 19th and 20th centuries. Key themes include the evolution of English democracy, the rise and decline of the British empire, Britain's role in international affairs, and England's tenuous relationship with Ireland, Scotland, and Wales. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H.

**HIST 324. Europe in the Twentieth Century. 3 Credits.**

This course explores the evolution and development of European states, institutions and cultures over the course of the twentieth century. Relations among European states--large and small--and their peoples are examined. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H (HIST 102H recommended).

**HIST 327. Russia: Culture and Civilization. 3 Credits.**

The course is a survey of Russian history from the ninth to the end of the nineteenth century stressing the distinctiveness of Russian culture and institutions, the influence of the West, the multi-national character of the Empire, and the decline of the old regime. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H.

**HIST 328. USSR and Contemporary Russia. 3 Credits.**

The course is a survey of the formation and development of the USSR in the twentieth century from the fall of the Russian monarchy and the revolutions of 1917 to the present. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 331. Colonialism and Nationalism in Southeast Asia. 3 Credits.**

The course is a study of Southeast Asia between 1750 and 1950. The focus will be on Indonesia, Vietnam, the Philippines, Burma, Malaysia and Thailand. Topics examined will include major theoretical frameworks used to understand colonialism and nationalism, the differential impact of colonial rule, and the impact of religions and 'western' ideologies on nationalist movements. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 332. South Asia Since Independence. 3 Credits.**

This is a comparative study of the main political, economic and social developments in the major countries of South Asia. Themes will include democratization, problems of economic development, the role of caste and religion, the causes of intrastate conflict and interstate conflict and the influence of global forces on the region. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 336. The Emergence of New China. 3 Credits.**

The course is the history of China covering late Imperial China, the impact of Western imperialism, the Republican Period, and the establishment of the People's Republic. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 338. Japan's Era of Transformation. 3 Credits.**

This is the history of Japan since 1800. It covers the decline of the Tokugawa Shogunate, modern nation building in the Meiji period, domestic conflicts and war in the twentieth century, and the roots of Japan's economic prominence today. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 345. Native American History. 3 Credits.**

The course examines the history and culture of Native American peoples from early contact with Europeans to present day. There is particular focus on ways that cultural interactions affected and transformed native peoples - their beliefs, societies, and political structures. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H.

**HIST 346. Colonial and Revolutionary America. 3 Credits.**

The course examines social, cultural, economic and political developments in North America from 1492 to the ratification of the Constitution of 1787. Course explores the role of class, gender, and race in the creation of an American culture. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 348. The Early Republic, 1787-1850. 3 Credits.**

The course explores America's transformation from a republic to a democracy by examining the political, economic, social and intellectual history of the United States' first half century. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 349. American Naval History. 3 Credits.**

This course examines American naval history and American naval theory from the colonial period to the present day. It analyzes the importance of American naval conflicts, developments in naval technology, and the social and political changes that shaped the U.S. Navy. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 350. History of the Old South. 3 Credits.**

The course is a study of the Old South civilization from the colonial era to the Civil War, with particular emphasis on the frontier, slavery, the cotton kingdom, and southern cultural contributions. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 351. The Civil War and Reconstruction. 3 Credits.**

The course is a study of the origins of the idea of secession and of the war, of the military, political, and economic contest between the Confederate and Federal governments, and finally of the long-range effects of the war as revealed in the failure of Reconstruction. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 352. The Immigrant Experience in U.S. History. 3 Credits.**

This class examines the history of U.S. immigration during the 19th and 20th centuries. The course strives to complicate the "Melting Pot" metaphor in U.S. history by exploring the transnational quality of immigrants' lives, the way class, race, gender, and nationality have shaped the immigrant experience, and the role nation-states have played in managing immigration. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, HIST 126H or HIST 127H.

**HIST 353. Robber Barons, Reformers, and Radicals: The US Gilded Age and Progressive Era. 3 Credits.**

This course covers the Gilded Age and Progressive Era of U.S. history (1870s-1920s), a dynamic period characterized by industrialization, imperialism, international and internal migration, World War I, and a variety of social and political movements. This course explores these and other topics from an international perspective to consider how global processes influenced the U.S., and how the U.S. influenced the rest of the world in the late 19th and early 20th century. Prerequisite: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 354. From the Jazz Age to the Atomic Age: US, 1920-1945. 3 Credits.**

The course covers the domestic and international history of the U.S. during the Roaring Twenties, The Great Depression, World War II. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 355. The United States, 1945-1991. 3 Credits.**

The course is the history of the United States from the end of World War II to the end of the Cold War. The course focuses on domestic politics, social change, economic developments and international relations. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 356. Virginia History. 3 Credits.**

The course is an examination of Virginia's past from Jamestown to the present. The course emphasizes the colonial experience, Virginia's role in the new nation, the post-Civil War era and Virginia in the twentieth century. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 357. The United States in the 1960s. 3 Credits.**

The course examines the political, social and cultural revolutions which occurred in the United States from 1960 to 1974. Topics include the reforms of JFK and LBJ; the rise of conservatism; the impact of the baby boom generation; the civil rights, anti-war, and women's movements; the war in Indochina; and Watergate and the fall of Richard Nixon. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 358. The U.S. in the Second World War. 3 Credits.**

The course is designed to familiarize students with important concepts in the history of America's involvement in the Second World War. It surveys the significant events, personalities, and changes that occurred between 1941 and 1945, heavily focusing on America's three "fronts": the European, the Pacific and the home front. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, HIST 126H or HIST 127H.

**HIST 359. American Maritime History. 3 Credits.**

The course explores the various maritime influences in American history. Topics discussed include ocean exploration, navies and maritime conflicts, shipping and shipbuilding, marine resource extraction, rivers and canal transportation, maritime migration, water use, and other issues in maritime history from exploration to the present. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 360. American Military History. 3 Credits.**

The course is a study of American military policy, 1763 to the present, in relation to its political, economic, and social implications. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 361. African-American History to 1865. 3 Credits.**

The course examines African-American history from the African background through the Civil War. Emphasis is placed on an analysis of African-Americans' role in the political, economic, social and cultural life of the United States. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 362. African-American History Since 1865. 3 Credits.**

This course examines African-American history from Reconstruction to the present. Emphasis is placed on the analysis of African-Americans' role in the political, economic, social and cultural life of the United States. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 363. Women in U.S. History. 3 Credits.**

The course examines the experiences of women in U.S. history from 1607 to the present, paying particular attention to influences of race, class, ethnicity and changing conceptions of gender. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 364. African American Genealogy. 3 Credits.**

This course is designed to introduce students to the historical and methodological approaches to genealogical research, both traditional and scientific. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, HIST 126H or HIST 127H.

**HIST 368. Internship. 3 Credits.**

The content varies according to the internship. Qualifies as a CAP experience. Prerequisites: Permission of the department and one or more Interpreting the Past courses.

**HIST 369. Practicum. 3 Credits.**

The content varies according to practicum. Qualifies as a CAP experience. Prerequisites: Permission of the department and one or more Interpreting the Past courses.

**HIST 370. Africa in Global Commerce and Culture, from 800-1960. 3 Credits.**

This course examines commercial and cultural developments in Africa in a world historical context, starting with the arrival of Islam towards the end of the first millennium and ending with European colonial rule. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 371. Modern Mexico. 3 Credits.**

This survey of Mexico's history since independence highlights the social, cultural and economic changes that accompanied four turning points in the political history of Mexico: the independence movement, the wars of the reform, the Revolution of 1910, and the trend toward democratization that began in the 1980s. Attention will be paid to the changing scope of Mexico's relations with the United States, and to comparisons of Mexico's experience with that of other Latin American countries. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 372. Central America and the Caribbean Since 1800. 3 Credits.**

This course surveys socio-economic and political change after about 1800 in the Caribbean Basin (Central America and the insular Caribbean), a region whose diverse colonial, ethnic, labor and migratory experiences will provide rich opportunities for comparative study. Plantation slavery and its legacies, independence movements, export-led economic growth, nationalism, social movements, revolution and great-power rivalries will be the major themes. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 373. U.S.-Latin American Relations. 3 Credits.**

This survey of Latin America's relations with the United States since the early nineteenth century will seek to identify and account for changing patterns in what has been a highly asymmetrical power relationship. The emphasis will be on the outcomes of U.S. policy in the region, combining the study of broad trends (especially in economic and security policy since the 1890s) with a close analysis of three cases: Mexico, Cuba and Central America. The influence of the larger international environment on those relations will be considered. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 379. The Ottoman Empire. 3 Credits.**

The course examines topically and chronologically the state, society and culture of the Ottoman Empire, which spread over Asia, Europe, and Africa from the 14th through the early 20th Century and ruled over religiously, ethnically, and linguistically diverse populations. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 380. Women and Gender in the Middle East. 3 Credits.**

The course examines the history of women and gender relations in the early modern and modern Middle East. The course traces how changing conceptions of the family and gender roles have shaped women's lives. The course also deals with the impact of colonialism and nation-building on women as well as on ideas of femininity and masculinity in the modern Middle East. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 386T. The Evolution of Modern Science. 3 Credits.**

The course traces the development of modern science from the ancient Greeks to the 21st Century. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 388T. Discovering Earth's History. 3 Credits.**

Geology and paleontology as technological systems during the industrial revolution of the nineteenth century, including global & local exploration, competing interpretations of empirical data, and the discovery that the earth itself had a history whose sources were inscribed in the very ground on which they walked. Readings include Darwin, Lyell, Humboldt, and others. Prerequisites: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, or HIST 105H.

**HIST 389T. Technology and Civilization. 3 Credits.**

This course examines the role of technology and relevant science. Students examine the interaction between society and technology and investigate why technology is both a reflection of, and a shaping influence upon, "modern" culture and beyond. Prerequisites: Three hours of history.

**HIST 391. Paris/Auschwitz Study Abroad. 3 Credits.**

This course explores the history of the Holocaust in France and Poland by taking students to key sites tied to the Holocaust in Europe. Students visit Paris and explore the history of pre-war Jewry and sites of deportation. Students travel to Poland and juxtapose the French and Polish experience and denial of the Holocaust. Public history in the museum setting is explored. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, HIST 126H or HIST 127H.

**HIST 392. The Holocaust and Vichy France. 3 Credits.**

This course surveys French history during World War II, focusing on the fall of France, the German occupation, and the establishment of the Vichy collaborationist government. It explores the fate of French and foreign-born Jews under Vichy, deportation and resistance, and the issues of post-war memory and denial. Prerequisites: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, HIST 126H or HIST 127H.

**HIST 393. Studies in Jewish History. 3 Credits.**

This course examines specific topics, eras, and themes of Jewish history. Specific titles will be listed in the on-line course schedule. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 396. Topics in History. 1-3 Credits.**

The course is a study of selected topics. These courses are open to both majors and nonmajors. History majors may take these courses to satisfy history concentration requirements. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 402W. Senior Seminar in History. 3 Credits.**

The course is an advanced study of selected topics leading to production of a research paper. It is required of all history and secondary education social studies majors. (This is a writing intensive course.) Prerequisites: HIST 201 and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**HIST 408/508. War and American Society in the Twentieth Century. 3 Credits.**

The course is an exploration of the content and meaning of wartime experiences within American society between 1898 and 1975. Emphasis is on comparing the levels of national, institutional and personal experiences of war as they affected people at home and in battle, and on considering the relationships between war-making and social development at particular times. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 409/509. History of US-Mexico Borderlands. 3 Credits.**

The course examines the history of the region straddling the U.S. - Mexico border from the Spanish Conquest to the present day, focusing on issues of immigration, economic and political integration and the complicated nature of state-building in a transnational environment. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 411. Muslims, Christians, and Jews in the Ottoman Empire. 3 Credits.**

The course examines the status and relations of the three major religious communities in the Islamic Ottoman Empire in the early modern and modern periods. The course addresses questions such as: Did coexistence or conflict mark the encounters between Muslims, Christians, and Jews? What was the legal status of non-Muslims? How did the Ottoman Empire deal with nationalism? Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 412. From Empire to Nation: Nation-Building in the Balkans and the Middle East. 3 Credits.**

The course traces the last turbulent century of the Ottoman Empire and its disintegration into nation-states in the Middle East and the Balkans up until the mid-20th Century. The course examines how the new states employed nationalism and modernization to build state, society and national culture. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 414. Freedom, Rights and Revolution: Evolution of the State System 1648-1815. 3 Credits.**

The course examines the social, cultural, political, legal and diplomatic history of Old Regime Europe, the rise of the territorial state, and challenges to its authority. In addition to events and sources contemporary to that age, students will be introduced to the most important interpretive theories that have emerged in the past generation on the Continent as well as in Britain and America. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 415. Empire, Nations, and Industrialization: Evolution of the State System, 1815-1914. 3 Credits.**

The course focuses on the evolution of international politics, diplomacy, and social, cultural and economic structures in the development of empires, nations and industrialization in the evolution of the modern state system from 1815 to 1914. Explores the relationship among European powers and their relations with smaller states in Europe and spheres of influence throughout the world. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 416. States, Territories and International Organization: Evolution of the State System Since 1914. 3 Credits.**

The course focuses on the evolution of international politics, diplomacy and social, cultural and economic structures in states territories, and international organizations since 1914. Emphasis on shifting European alignments since 1914, the two World Wars, the development of the bi-polar world and the development and evolution of international organizations. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 420/520. Fascism in Europe. 3 Credits.**

The course explores the genesis and development of fascism in Europe between World Wars I and II. Particular emphasis on Fascism in Italy and National Socialism in Germany. Appeal of fascist movements to populations across the socio-economic spectrum, fluidities of ideology and practice, fascism's impact on political, economic, social, and cultural life in the interwar period are explored. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 439/539. Politics and Society in East Asia Since 1945. 3 Credits.**

The course explores the political and social developments in Japan, China, and Korea since the end of World War II. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 447. U.S. Foreign Relations, 1776-1914. 3 Credits.**

The course explores the foreign relations of the United States from the revolutionary period to 1914 with particular emphasis on the ideological and domestic roots of American foreign policy. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 448. U.S. Foreign Relations Since 1914. 3 Credits.**

The course explores the foreign relations of the United States from the First World War to the present, with particular emphasis on the ideological and domestic roots of American foreign policy. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 450. American Revolution and Historical Memory. 3 Credits.**

This seminar style course will introduce the principal writings and interpretations of the era of the American Revolution from the mid-eighteenth century to the ratification of the federal constitution of 1787. Besides exploring the relationship between the British Empire and its colonies, the course will look at the role of historical memory in understanding of the past. Prerequisites: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, HIST 126H or HIST 127H.

**HIST 451. The Atlantic World and Early America. 3 Credits.**

During the early modern period, global processes of imperial, economic, and demographic expansion drew British North America into transnational networks that spanned the Atlantic Ocean and brought Europeans, Africans, and Americans together. This course will explore the Atlantic World as a place, a process, and a new field of historical inquiry. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, HIST 126H or HIST 127H.

**HIST 455/555. African-American Historiography. 3 Credits.**

The course is an examination of the ways historians have addressed specific issues in African-American history. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 456/556. Research in Local History. 3 Credits.**

The course explores the history of Hampton Roads through student use of research materials. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 470/570. Democracy and Development in Modern Latin America. 3 Credits.**

This course analyzes, from a historical perspective, two core problems in Latin America's modern (since c. 1880) history: political authoritarianism and economic underdevelopment. The temporal and spatial dimensions of change are highlighted in discussions of patron-client political systems, military autonomy and impunity, social movements and revolution, export-oriented economic growth, industrialization, and the roles of national, ethnic and gender identities. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 475/575. History of Modern Africa. 3 Credits.**

The course is designed to enrich students' understanding of the intersections of political, economic, social and cultural forces that shaped Africa in the last 150 years and continue to affect the lives of peoples throughout the continent. It will focus on a series of major historical transitions that have shaped the development of modern Africa, including the end of the Atlantic slave trade, European imperial conquest and colonial rule, African resistance to European rule, social and cultural transformations, the end of colonial rule and post-colonial challenges. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 477. Africa and the West from the Era of the Slave Trade through Modern Times. 3 Credits.**

This course analyzes African perceptions of the West from the moment the continent was connected with the Atlantic world in the era of the slave trade, through the colonial period, to the late twentieth century. The course specifically looks at how Africans have dealt intellectually with large historical processes such as Atlantic commerce, Christianity, and colonialism. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 480W. Senior Seminar in International Studies. 3 Credits.**

This writing-intensive course for advanced undergraduates explores the international dimensions of historical problems selected by the instructor. It fulfills the Senior Seminar requirement for International Studies majors, who are expected to have senior standing. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, senior standing in the BAIS degree program or permission of the instructor and the director of the BAIS program.

**HIST 481. Museums and Museology. 3 Credits.**

The course examines the history of the public museum. It introduces museology, the profession of museum organization and management, focusing on design, outreach, artifact acquisition and preservation, and international museum standards. Museums as sites of historical research and teaching will receive special attention. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, HIST 126H or HIST 127H.

**HIST 493. Holocaust and Film: Representing the Unimaginable in the Visual Turn. 3 Credits.**

The course explores the history of the Holocaust through the medium of film as document, testimony, propaganda, artifact, artistic representation and projection of collective memory. Special attention is given to considering the medium of film from the viewpoint of the historian. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, HIST 105H, HIST 126H or HIST 127H.

**HIST 495/595. Topics in History. 1-3 Credits.**

The course is an advanced study of selected topics designed for small groups of qualified students to work on subjects of mutual interest which may not be offered regularly. These courses appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisites: HIST 100H or HIST 101H or HIST 102H or HIST 103H or HIST 104H or HIST 105H or HIST 126H or HIST 127H.

**HIST 497/597. Tutorial Work in Special Topics in History. 3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: Senior standing and approval of the department chair.

**HIST 498/598. Tutorial Work in Special Topics in History. 3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: Senior standing and approval of the department chair.

## HLTH - Health

### HEALTH Courses

**HLTH 101. Introduction to the Health Professions. 1 Credit.**

Lecture 1 hour; 1 credit. Explores careers in the health professions. Assists students in making informed choices regarding careers and programs of study and prepares students to apply for acceptance into health-related majors. Activities are included to help freshmen transition to college work.

**HLTH 102. Health Professions in the United States. 1 Credit.**

Lecture 1 hour; 1 credit. Prerequisite: HLTH 101 or permission of instructor. This course examines the health care system in the U.S. and identifies the role played by selected health professions in the delivery of care. Designed for students preparing themselves for entry into health related majors.

**HLTH 120G. Information Literacy for Health Professions. 3 Credits.**

This course focuses on building basic skills for conducting health research and includes guidance on locating, utilizing, and evaluating sources. The course examines the methods and tools of health analysis and explores the mechanics of research presentation and writing to help health-related majors prepare for successful completion of upper-division requirements. The class provides a brief introduction to ethical issues related to health research and writing. The class also covers basic computer skills such as using spreadsheets and document management tools.

**HLTH 130. Computer Technology Skills for the Health Professions.. 2 Credits.**

This course is designed to help students in the health professions gain the computer and technological skills needed to succeed in their academic careers and in today's workplace. Students will develop personal competency in practical applications such as Google Docs, spreadsheets and presentation graphics, note taking applications, document revisions, computer hardware, information retrieval and ethics in health information.

**HLTH 397. Independent Study. 3 Credits.**

**HLTH 425. Leadership and Management for Health Professionals. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. A review of the administration, management, policies, and practices governed by scopes of practice in a variety of health care settings. Topics covered include communication, planning and decision making, leadership and conflict management, and legal and ethical issues of concern to specific health professions.

**HLTH 490. Undergraduate Research Seminar. 1-3 Credits.**

Seminar. 1-3 credits. Prerequisite: admission to a health science major, pre-approval by the program director, cumulative GPA of 3.00 or higher, and an approved research course. Supervised research experience in a clinical health science discipline resulting in a research paper and oral presentation. Student and faculty supervisor develop and approve a contract of required research activities for the semester, such as attending research lab meetings, data collection, coding and/or analysis, and information search.

**HLTH 491. Undergraduate Research Seminar. 1-3 Credits.**

Seminar. 1-3 credits. Prerequisite: admission to a health science major, pre-approval by the program director, cumulative GPA of 3.00 or higher, and an approved research course. Supervised research experience in a clinical health science discipline resulting in a research paper and oral presentation. Student and faculty supervisor develop and approve a contract of required research activities for the semester, such as attending research lab meetings, data collection, coding and/or analysis, and information search.

**HLTH 495/595. Topics in Health. 1-3 Credits.**

## HMSV - Human Services

### HUMAN SERVICES Courses

**HMSV 339. Interpersonal Relations. 3 Credits.**

Students will learn concepts and theories of interpersonal relationships. Development of skills necessary for effective communication will be stressed. Prerequisites: ENGL 211C or ENGL 221C or ENGL 231C.

**HMSV 341. Introduction to Human Services. 3 Credits.**

Students will learn about human services, the helping process, and the role and function of the human service worker. Students will be exposed to local and state human services facilities. A grade of C or better is required. Prerequisites: ENGL 211C or ENGL 221C or ENGL 231C.

**HMSV 343W. Human Services Methods. 3 Credits.**

Presents theories and techniques used by human services workers in a variety of settings. A grade of C or better is required. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C. Pre- or corequisite: HMSV 341.

**HMSV 344. Career Development and Appraisal. 3 Credits.**

Focuses on career development throughout the life span with emphasis on vocational theories, interventions, assessments, and socioeconomic factors. Pre- or corequisite: HMSV 341 with a grade of C or higher.

**HMSV 346. Diversity Issues in Human Services. 3 Credits.**

This course serves as an introduction to multicultural helping. The influence of socio-identities (e.g., race, ethnicity, religion, gender, socioeconomic status, sexual orientation) on individuals' functioning, concerns, and the helping process will be explored. Pre- or corequisite: HMSV 341 with a grade of C or higher.

**HMSV 368. Field Observation in Human Services. 3 Credits.**

Students will visit and examine human services systems such as mental health, substance abuse, criminal justice, education, rehabilitation, and professional associations to facilitate decision-making in selecting an internship and to gain a complex understanding of the roles of the human services professional. A grade of C or better is required. Prerequisites: HMSV 339, HMSV 341 with a grade a C or higher, and HMSV 343W with a grade of C or higher.

**HMSV 440W. Program Development, Implementation, and Funding. 3 Credits.**

This course represents models and practices of developing, implementing, and evaluating human services programs. The course includes an overview of funding human services programs, including grant writing and fundraising. A grade of C or better is required. This is a writing intensive class. Prerequisites: HMSV 341 with a C or better and HMSV 343W with a C or better.



**HMSV 441. Non-Profit Fund-Raising in Human Services. 3 Credits.**

This course is designed to expose human service students to the art of ethical fund-raising in human services, including annual and capital campaigns, telemarketing, special events, direct mail marketing, face-to-face solicitation, e-fund-raising, and grant writing. Prerequisites: HMSV 341 with a grade of C or higher and HMSV 343W with a grade of C or higher.

**HMSV 444. Psycho-educational Groups. 3 Credits.**

This course combines lectures and experiential learning about psycho-educational groups. Principles and practices for developing and leading psycho-educational groups are emphasized. Prerequisite: HMSV 341 with a grade of C or higher and HMSV 343W with a grade of C or higher.

**HMSV 447. Addictions: Theory and Intervention. 3 Credits.**

This course examines the etiology, risk factors and treatment of alcoholism and other addictions. Prerequisites: HMSV 341 with a grade of C or better and HMSV 343W with a grade of C or better.

**HMSV 448. Interventions and Advocacy with Children. 3 Credits.**

This course provides an overview of how human service workers assist children in a variety of settings. Emphasis will be placed upon advocacy, supportive work, and short term crisis intervention. Prerequisites: A grade of C or higher in HMSV 341 and HMSV 343W.

**HMSV 449. Theory and Practice of Prevention in Human Services. 3 Credits.**

Students will learn theories and strategies for the practice of prevention services aimed at promoting the health and well-being of children, adolescents, and adults. Existing prevention programs, policies, and necessary resources will be examined. Students will develop beginning skills in the use of prevention strategies with individuals and groups. Prerequisite: HMSV 341 and HMSV 343W with a grade of C or higher.

**HMSV 456. Diversity Experience in Ireland. 3 Credits.**

This course is an in-depth, cross-disciplinary study of cultural similarities and differences in approaches to social conflict and other social problems in the United States and in Ireland. A two-week study abroad period will bring students into intensive contact with educators, scholars, and community activists in Ireland. This course will also serve as an introduction to multicultural helping. The influence of socio-identities (e.g. race, ethnicity, religion, gender, socioeconomic status, sexual orientation) on individuals' functioning, concerns, and the helping process will be explored. Prerequisite: HMSV 341 or permission of instructor.

**HMSV 468. Internship in Human Services. 12 Credits.**

This course involves field placement in a human services setting. Approximately 400 hours are devoted to field placement, group seminars and individual supervision. A grade of "C" or better must be earned to complete the human services major. (qualifies as a CAP experience) Prerequisites: completion of all coursework including General Education requirements, core courses, major courses, and elective courses; a grade of C or better in HMSV 341, HMSV 343W, HMSV 368, and HMSV 440W; and program approval.

**HMSV 491. Family Guidance. 3 Credits.**

This course provides a study of the family as a system and an introduction to a variety of issues confronting the family, including child abuse, spouse abuse, and others that produce more than usual stress in the family. Available community resources for helping families will be examined. Prerequisites: HMSV 341 and HMSV 343W with a grade of C or higher.

**HMSV 495. Topics in Human Services. 1-6 Credits.**

The study of selected topics in human services. Prerequisites: senior standing or permission of the instructor.

## **HNRS - Honors**

### **HONORS Courses**

**HNRS 200. Peer Education and Leadership. 3 Credits.**

Lecture, 3 hours; 3 credits. This course prepares students for work as peer mentors and tutors. Students will develop skills in information literacy and research as they learn how to create and implement individualized student success/academic plans for themselves and others.

**HNRS 201. Monarch Think Tank I. 3 Credits.**

The Monarch Think Tank draws students from all disciplines to collaborate with each other, faculty and community members as they design project-based solutions to pertinent social issues. Think Tank topics vary each year. Guided by distinguished faculty, students analyze their topic through in-depth classroom and field research, readings and off-campus trips.

**HNRS 226. Undergraduate Research Apprenticeship. 1-3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: approval of Honors College Dean. The Research Apprenticeship offers students the opportunity to develop and acquire skills in research and information literacy through active involvement in ongoing research programs or in research projects under the supervision of a faculty mentor. Experiences may include but are not limited to gathering and analyzing information to develop proposals, survey construction, stakeholder identification, stimulus development, quantitative and qualitative data collection, statistical analysis, writing reports, and presenting results. Available research projects/programs will vary each semester. Interested students should consult with the Honors College Dean and visit the Honors College website for more information about research apprenticeship opportunities: <http://www.odu.edu/ao/honors>.

**HNRS 301. Monarch Think Tank II. 3 Credits.**

The Monarch Think Tank draws students from all disciplines to collaborate with each other, faculty and community members as they design project-based solutions to pertinent social issues. Think Tank topics vary each year. Guided by distinguished faculty, students analyze their topic through in-depth classroom and field research, readings and off-campus trips. Prerequisite: ENGL 211C or equivalent.

**HNRS 326. Undergraduate Research Apprenticeship II. 3 Credits.**

Research apprenticeship with a faculty member, assisting a faculty member in the development and execution of research. May be repeated to 9 credit hours maximum. Prerequisites: Honors College, permission of the instructor and 3.0 cumulative grade point average.

**HNRS 387. Honors Civic Learning Project. 1 Credit.**

1 credit. Prerequisite: junior standing in the Honors College. Students volunteer for 45 hours of work, keep a work experience journal reflecting on their day-to-day experiences as a volunteer, and write a short paper detailing how the experience helped them to identify, revise and accomplish future learning and career goals.

**HNRS 487. Senior Honors Colloquium. 3 Credits.**

3 credits. Prerequisite: senior standing in the Honors College or permission of the dean. Fulfills the Honors College capstone requirement. The purpose of the course is to give students experience in working as a group of "consultants" who collaboratively undertake secondary and primary research and report preparation on behalf of a "client."

**HNRS 497. Honors Independent Study. 1-3 Credits.**

1-3 credits. Offered upon request each semester. Prerequisite: open to juniors and seniors in the Honors College. This course is an opportunity for students to engage in directed readings and/or research in a topic with which they are familiar.

**HNRS 498. Honors Independent Study. 1-3 Credits.**

1-3 credits. Offered upon request each semester. Prerequisite: open to juniors and seniors in the Honors College. This course is an opportunity for students to engage in directed readings and/or research in a topic with which they are familiar.

**HNRS 499. Senior Honors Thesis. 3 Credits.**

3 credits. Prerequisites: permission of the Honors College Dean, 3.25 cumulative GPA. Each student will undertake a research experience under the supervision of a faculty member. A research proposal and research report are required.

# HPE - Health Physical Education

## HEALTH PHYSICAL EDUCATION Courses

### HPE 230. Field Experience in Physical Education and Health. 2 Credits.

Teacher candidates gain insight into the techniques, methodology, and philosophy of field-based health and physical education teachers. Teacher candidates will be expected to observe and participate in the teaching of simple lessons.

### HPE 327. Teaching of Health and Physical Education, Pre-K-8. 3 Credits.

This course is designed to prepare classroom teachers in PreK-8 licensure programs for the teaching of health and physical education. Appropriate content, instructional strategies, effective classroom management, and safety issues and requirements will be presented. Prerequisites: junior standing.

### HPE 369. Practicum in Physical Education and Health. 3 Credits.

A clinical experience that allows the teaching candidate to teach and observe professionals in a field-based setting. Portfolio development, reflective assessment of teaching, and student assessment techniques will be emphasized. Prerequisites: HPE 230, passing scores on PRAXIS I or State Board of Education-approved SAT or ACT scores and admission into teacher education.

### HPE 406/506. Tests and Measurement in Physical Education and Health. 3 Credits.

This course is designed to acquaint the student with tests and measurement in the fields of health and physical education, test construction, scoring, and methods of using results. Prerequisites: junior standing.

### HPE 430/530. Teaching Wellness and Health-Related Fitness. 3 Credits.

The study of techniques for the teaching of wellness and health-related fitness. Content to be covered includes drug education, nutrition, wellness, mental health, and various aspects of fitness training appropriate for the teaching of PreK-12 physical education and health. Prerequisites: PE 300.

### HPE 485. Teacher Candidate Internship. 12 Credits.

A culminating experience that provides a field-based application of effective techniques in behavior, management, instructional strategies, and the development of professional attributes in K-12 school setting. (qualifies as a CAP experience) Prerequisites: acceptance into teacher education, completion of approved program, passing scores on the appropriate PRAXIS II content examination, and an approved application for Teacher Candidate Internship.

### HPE 487/587. Teacher Candidate Seminar. 1 Credit.

Study and group discussion of problems growing out of the student teaching (teacher candidate internship) experience. Prerequisites: acceptance into teacher education and approval of the program advisor.

### HPE 497/597. Topics in Health and Physical Education. 1-3 Credits.

Prerequisite: permission of the instructor.

### HPE 498/598. Topics in Health and Physical Education. 1-3 Credits.

Prerequisite: permission of the instructor.

# IDS - Interdisciplinary Studies

## INTERDISCIPLINARY STUDIES Courses

### IDS 300W. Interdisciplinary Theory and Concepts. 3 Credits.

Lecture and discussion 3 hours; 3 credits. Prerequisite: a grade of C or better in ENGL 211C, ENGL 221C or ENGL 231C. An examination of the history, concepts and application of interdisciplinary study. This course includes an analysis of similarities and differences in academic disciplines and the application of interdisciplinary approaches to a specific topic of study. (This is a writing intensive course.)

### IDS 368. Internship in Interdisciplinary Studies. 1-6 Credits.

1-3 credits. Prerequisite: junior standing and permission of Individualized interdisciplinary studies program coordinator. An opportunity to integrate service and applied learning experience with interdisciplinary perspectives.

### IDS 397. Independent Study. 1-6 Credits.

### IDS 398. Independent Study. 1-6 Credits.

### IDS 400/500. Study Abroad. 0 Credits.

### IDS 493. IDS Electronic Portfolio Project. 3 Credits.

Lecture 3 hours; 3 credits. Prerequisites: IDS 300W and senior standing. The preparation of an electronic portfolio integrating the student's academic study, work experiences, skill identification and work products. Alternative formats are used for varying uses of the portfolio.

### IDS 495. Topics in Integrative Studies. 3 Credits.

Lecture 3 hours; 3 credits. Prerequisite: IDS 300W. Focused study of selected topics linking perspectives, research and applications from a variety of disciplines. Emphasis is on disciplinary synthesis.

### IDS 497. IDS Individualized Senior Project. 3 Credits.

This course is a vehicle for the execution of the senior project requirement of the Interdisciplinary Studies Program. The project will be negotiated between the student, faculty sponsors, and the program. Prerequisites: IDS 300W, permission of the instructor and an approved IDS curriculum plan.

# IDT - Instructional Design and Technology

## INSTRUCTIONAL DESIGN AND TECHNOLOGY Courses

### IDT 475/575. Web Development for Educators. 3 Credits.

Lecture 3 hours; 3 credits. Prerequisite: senior standing/graduate standing. Provides both a conceptual framework and hands-on experience in the design and development of online web resources for educators. The course introduces the student to the various uses and features of online tools and technologies, investigates online learning strategies, and explores best practices in the use of the web to enhance learning. Topics include fundamentals of web authoring: screen design, use of web page creation tools, and functional use of HTML and derivatives.

# INBU - International Business

## INTERNATIONAL BUSINESS Courses

### INBU 367. Cooperative Education. 1-3 Credits.

1-3 credits. May be repeated for credit. Prerequisites: Permission of IB coordinator and Career Management Center, and a declared major in the University or permission of the Dean's Office of the CBPA. Supervised experience in the international business work place requiring written statement of objectives and evaluation of experience. Pass/fail grading only. (qualifies as a CAP experience).

### INBU 368. Internship in International Business. 1-3 Credits.

1-3 credits. Prerequisites: Permission of IB coordinator and Career Management Center, and a declared major in the University or permission of the Dean's Office of the CBPA. Supervised experience in the international business work place requiring written statement of objectives and evaluation of experience. Pass/fail grading only. (qualifies as a CAP experience).

### INBU 431. Doing Business in Europe. 3 Credits.

Lecture 3 hours; 3 credits. Prerequisites: MGMT 325, FIN 323, and MKTG 311 or permission of the instructor, and a declared major in the University or permission of the Dean's Office of the CBPA. A survey course to provide an overview of the contemporary business environment in Europe, with a focus on the European Union. Topics will include an examination of the social, political, and economic forces which affect business in Europe.

### INBU 432. Doing Business in Latin America. 3 Credits.

Lecture 3 hours; 3 credits. Prerequisites: MGMT 325, FIN 323, and MKTG 311 or permission of the instructor, and a declared major in the University or permission of the Dean's Office of the CBPA. A survey to provide an overview of the contemporary business environment in Latin America. Topics will include an examination of the social, political and economic forces which affect business in Latin America.

**INBU 433. Doing Business in Asia. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: MGMT 325, FIN 323, and MKTG 311 or permission of the instructor, and a declared major in the University or permission of the Dean's Office of the CBPA. An analysis of business practices in Asia. Emphasis will be on business, government relations, business strategy, structure, organizational processes, and human resource management.

**INBU 434. International Trade Field Study. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: ECON 450, MKTG 411, FIN 435 or MGMT 361, or permission of the instructor, and a declared major in the University or permission of the Dean's Office of the CBPA. An applied field research study to develop an export trade plan which involves market analysis, risk analysis, financing and distribution decisions in overseas markets. (qualifies as a CAP experience).

**INBU 450. Global Business. 3 Credits.**

Lecture, discussion and case studies. A capstone course to integrate and apply the theories and concepts learned in required international business courses to the operations of international business organizations. Prerequisites: ECON 450, MKTG 411, FIN 435, or permission of the instructor, and a declared major in the University or permission of the Dean's Office of the CBPA.

**INBU 463. International Business Seminar Abroad. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: a declared major in the University or permission of the Dean's Office of the CBPA. A study tour abroad arranged in cooperation with a foreign university, including lectures on international business topics and visits to international firms and economic/business organizations. Written work required.

**INBU 495. Topics in International Business. 1-3 Credits.**

Lecture and discussion 3 hours; 1-3 credits. Prerequisite: permission of the IB coordinator, and a declared major in the University or permission of the Dean's Office of the CBPA. A study of selected topics, the title of which will appear in the course schedule.

**INBU 496. Topics in International Business. 1-3 Credits.**

Lecture and discussion 3 hours; 1-3 credits. Prerequisite: permission of the IB coordinator, and a declared major in the University or permission of the Dean's Office of the CBPA. A study of selected topics, the title of which will appear in the course schedule.

**INBU 497. Independent Study in International Business. 1-3 Credits.**

1-3 credit hours. Prerequisite: permission of the department. Affords students the opportunity to undertake independent study under the direction of a faculty member.

## IT - Information Technology

### INFORMATION TECHNOLOGY Courses

**IT 150G. Basic Information Literacy and Research. 3 Credits.**

Lecture 3 hours; 3 credits. This course is designed to provide students with the basic skills necessary to identify, to access and to utilize task appropriate information. Students will learn to evaluate information sources and to apply good research strategies. The course will address qualitative, quantitative, visual and auditory data sources along with the ethical use of data and respect for intellectual property. Focus will be given to research topics in various fields including business, humanities, social science and technology.

**IT 201. Introduction to Information Systems. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. An introduction to the major hardware/software components of computer-based information systems. Additional topics include databases, networks, and telecommunications. Intended as an introductory course for Information Systems majors.

**IT 210. Business Applications with C++. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. An Introductory course on programming using C++ that emphasizes top down design and documentation representative of business needs and requirements. Topics include simple data types, input/output streams, control structures and logical expressions, functions, arrays, records, and pointers.

**IT 310. GUI Programming with C++. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: IT 210 or CS 150 with a C or better (grade requirement may be waived by the department) and a declared major in the university or permission of the Dean's Office of the CBPA. An advanced C++ programming course focusing on object-oriented design/methodologies and the development of Graphic User Interfaces (GUI) for business applications. Special topics include: dynamic variables, linked lists, abstract data types, classes, inheritance, composition, exception handling, templates, and overloading.

**IT 317. Principles of Technology Architecture. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: IT 201 with a C or better (grade requirement may be waived by the department) and MATH 162M, and a declared major in the university or permission of the Dean's Office of the CBPA. A comprehensive treatment of information theory, computer architecture, processor implementation and data communications.

**IT 325. Web Site and Web Page Design. 3 Credits.**

Advanced design and implementation strategies are utilized to create dynamic e-commerce applications. Keyconcepts include: web page design, graphic composition, scripting languages, animation and Internet security.

**IT 360T. Principles of Information Technology. 3 Credits.**

A survey of computer hardware, software, procedures, applications, and management information concepts. Provides an understanding of the application of the computer to the support of managerial decision making. Information Systems majors may not use this course for credit toward the B.S.B.A. degree. Prerequisite: completion of general education information literacy and research requirement and junior standing; and a declared major in the University or permission of the Dean's Office of the CBPA.

**IT 361. Systems Analysis. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: ACCT 201, IT 201 and IT 210, each with a C or better (grade requirement may be waived by the department), and a declared major in the university or permission of the Dean's Office of the CBPA. Introduction to the Systems Development Life Cycle (SCLC) from an information systems project perspective. Emphasis is placed on the planning and analysis functions performed during information systems project work. The student will be introduced to tools and techniques utilized in development of system models representing modern business activities. Computer-Aided Systems Engineering (CASE) tools will be employed to create process and data-driven versions of these models.

**IT 367. Cooperative Education. 1-3 Credits.**

1-3 credits. Prerequisite: junior standing and a declared major in the university or permission of the Dean's Office of the CBPA. Approval for enrollment and allowable credits are determined by the department and Career Management in the semester prior to enrollment. Available for pass/fail grading only. (qualifies as a CAP experience).

**IT 368. Student Internship. 1-3 Credits.**

1-3 credits. Prerequisite: junior standing and a declared major in the university or permission of the Dean's Office of the CBPA. Approval for enrollment and allowable credits are determined by the department and Career Management in the semester prior to enrollment. Available for pass/fail grading only. (qualifies as a CAP experience).

**IT 369. Practicum. 1-3 Credits.**

1-3 credits. Prerequisite: junior standing and a declared major in the university or permission of the Dean's Office of the CBPA. Approval for enrollment and allowable credits are determined by the department and Career Management in the semester prior to enrollment. Available for pass/fail grading only. (qualifies as a CAP experience).

**IT 372. COBOL and Applications. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 310 and a declared major in the university or permission of the Dean's Office of the CBPA. Introduction to the COBOL programming language and its application in industry and government.

**IT 410. Business Intelligence. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: BNAL 306 and IT 450. Business intelligence, data warehouse, data mining, and OLAP. The course will use state-of-the-art business intelligence software tools including SAS products to provide hands-on experience in designing and using data warehouses.

**IT 415. Business Telecommunications and Networks. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: IT 317 with a C or better; IT 310 and IT 361. and a declared major in the university or permission of the Dean's Office of the CBPA. Telecommunications, hardware, software, transmission facilities and methods, industry general structure of network design, implementation, and management. Emphasis on state-of-art technology and current business environments.

**IT 416. Network Server Configuration and Administration. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 415, and a declared major in the university or permission of the Dean's Office of the CBPA. Advanced course on configuration and management of network servers. Topics include: user and storage management, ACLs, group policy, configuring security, backups and disaster recovery, and server management.

**IT 417. Management of Information Security. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 415, and a declared major in the university or permission of the Dean's Office of the CBPA. This course emphasizes the need for management and technology to successfully implement an information security program in an organization. Threats, attacks, legal and ethical issues, risk assessment and control strategies; planning, development, and maintenance of security policies; contingency planning; firewalls, intrusion detection systems and security tools; and management of information security are some of the topics covered in this course.

**IT 420. Object-Oriented Application Development Using Visual Basic. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: CS 250 or IT 310, and a declared major in the university or permission of the Dean's Office of the CBPA. Advanced design and implementation strategies are utilized to create dynamic client/server applications. Key concepts include: abstractions, encapsulation, inheritance, polymorphism, persistence, and dynamic binding.

**IT 425. Information Systems for International Business. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: The general education impact of technology requirement, a declared major in the university or permission of the department. The international business organization and its relationship to information systems architecture with emphasis on the role of connectivity technology as a driver of globalization. An introduction to the economics and structure of the international information technology marketplace.

**IT 430/530. Object-Oriented Programming with JAVA. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 310 or CS 250, and a declared major in the university or permission of the Dean's Office of the CBPA. An introduction to JAVA as an object-oriented language used to write JAVA applets and applications. Business examples incorporating multimedia, multithreading, networking, and advanced graphical interfaces are used to reinforce the object-oriented concepts of abstraction, encapsulation, inheritance, polymorphism, persistence, and dynamic binding.

**IT 450. Database Concepts. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: IT 317 with a C or better; IT 310 and 361, and a declared major in the university or permission of the Dean's Office of the CBPA. Introduction to database concepts. Historical development, data models, database analysis, design and implementation, query languages, data security, and introduction to business transaction systems.

**IT 451. Database Administration. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 450, and a declared major in the university or permission of the Dean's Office of the CBPA. Provides the conceptual framework for database architecture and database administration. Topics include: physical database structure, object management, and control of user access.

**IT 453. Database Deployment and Performance Tuning. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: IT 451, and a declared major in the university or permission of the Dean's Office of the CBPA. Examines techniques and methodologies that are used to insure the deployment of efficient, secure, and high-performance database applications.

**IT 461. Implementing Internet Applications. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: CS 250 or IT 310, and a declared major in the university or permission of the Dean's Office of the CBPA. Advanced design and implementation strategies are utilized to create dynamic e-commerce applications. Key concepts include: Internet architecture, structured data languages, scripting languages, programming languages, database connectivity, and Internet security.

**IT 464. Project Management in Information Systems. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: IT 317 with a C or better; IT 310 and 361 and a declared major in the university or permission of the Dean's Office of the CBPA. This course focuses on project management techniques and methodologies that can be adopted to Information Technology software and systems projects.

**IT 473. Systems Design and Implementation. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: IT 317 with a C or better; IT 310 and 361, and a declared major in the university or permission of the Dean's Office of the CBPA. A case-study-based presentation of system life cycle phases subsequent to systems analysis. The student will utilize Computer-Aided Systems Engineering (CASE) tools to design logical and physical models to define business requirements. Factors relevant to the creation of business information systems through development and implementation will be examined in detail. Topical issues examined include: CASE-based methodologies, project management, feasibility analysis, database design, on-line system design, prototyping, development/testing strategies, and implementation/training strategies. Students, potentially working in teams, are expected to apply these design strategies to industry case studies, resulting in new and comprehensive system designs, the results of which will be delivered in formal presentation fashion in a classroom setting. (qualifies as a CAP experience).

**IT 474. Strategic IT Administration. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: IT 361 and a declared major in the university or permission of the Dean's Office of the CBPA. Focuses on improving business use of existing IT and achieving competitive advantage. All students gain a strategic perspective on an important organizational resource--information. Plus, it will prepare IT students for managerial positions and effective communication with executives.

**IT 495/595. Selected Topics in Information Systems. 1-3 Credits.**

3 credits. Prerequisite: permission of the department. Taught on an occasional basis. See the course schedule for the particular topic being taught each semester.

**IT 497. Independent Study in Information Systems. 1-3 Credits.**

1-3 credits. Prerequisite: permission of the department. Affords students the opportunity to undertake independent study under the direction of a faculty member.

## ITAL - Italian

### ITALIAN Courses

**ITAL 101F. Beginning Italian I. 3 Credits.**

Aural comprehension, oral drills and discussion of grammar principles; written exercises, and reading assignments. Prerequisites: ITAL 101F.

**ITAL 102F. Beginning Italian II. 3 Credits.**

Lecture 3 hours; 3 credits each semester. 101F is prerequisite to 102F. Aural comprehension, oral drill and discussion of grammar principles; written exercises, and reading assignments.

**ITAL 201. Intermediate Italian I. 3 Credits.**

Aural comprehension, oral drills and discussion of grammar principles; written exercises, and readings assignments. Prerequisites: ITAL 102F or satisfactory score on the placement test.

**ITAL 202. Intermediate Italian II. 3 Credits.**

Aural comprehension, oral drills and discussion of grammar principles; written exercises, and reading assignments. Prerequisites: ITAL 201.

**ITAL 295. Topics. 1-3 Credits.**

A study of selected topics for elective credit. These courses will appear in the course schedule and will be more fully described in information distributed to all academic advisors.

**ITAL 296. Topics. 1-3 Credits.**

A study of selected topics for elective credit. These courses will appear in the course schedule and will be more fully described in information distributed to all academic advisors.

**ITAL 395. Topics in Italian. 1-3 Credits.**

1-3 credits each semester. Prerequisite: ITAL 202 or equivalent. A study of selected topics for elective credit. These courses will appear in the course schedule booklet and will be more fully described in a booklet distributed to all academic advisors.

**ITAL 396. Topics in Italian. 1-3 Credits.**

1-3 credits each semester. Prerequisite: ITAL 202 or equivalent. A study of selected topics for elective credit. These courses will appear in the course schedule booklet and will be more fully described in a booklet distributed to all academic advisors.

## JAPN - Japanese

### JAPANESE Courses

**JAPN 111F. Beginning Japanese. 6 Credits.**

Intensive elementary course designed to help students acquire basic Japanese language skills; reading, writing, listening, speaking. Introduction to Japanese writing systems (hiragana, katakana, kanji) and cultural perspectives such as greetings, informal/formal address. Emphasis on gaining correct pronunciation and firm grasp through substantial homework.

**JAPN 195. Topics in Japanese. 1-3 Credits.**

A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule and will be more fully described by academic advisors.

**JAPN 196. Topics in Japanese. 1-3 Credits.**

A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule and will be more fully described by academic advisors.

**JAPN 212. Intermediate Japanese II. 6 Credits.**

More grammar principles are discussed; writing exercises with more kanji. Prerequisites: JAPN 111F with a grade of C or above or satisfactory score on the placement test.

**JAPN 295. Topics in Japanese. 1-3 Credits.**

A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule and will be more fully described by academic advisors. Prerequisites: 6 hours at the 100 level.

**JAPN 296. Topics in Japanese. 1-3 Credits.**

A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule and will be more fully described by academic advisors. Prerequisites: 6 hours at the 100 level.

**JAPN 309. Kanji I. 3 Credits.**

This course is designed for students who have completed 12 credits of Beginning and Intermediate Japanese. The main focus is on training students how to use a kanji dictionary efficiently and guiding them to become an autonomous learner of the Japanese language. Prerequisites: JAPN 212.

**JAPN 310. Japan: A Cultural Odyssey. 3 Credits.**

Prerequisites: junior standing or permission of the instructor. Lectures in English, films and slides, all readings, discussions, and lectures in English. Studies of novels, short stories, poems, and films produced by Japanese authors. Covers Japan's initial encounter with the West and the establishment of individual identity. No knowledge of Japanese necessary though some familiarity with Japanese history, art, and society would be helpful. Cross-listed with FLET 310.

**JAPN 311. Advanced Japanese Language and Culture I. 3 Credits.**

Emphasis on the development of aural-oral skills. An intensive study of the principles of the Japanese grammar and syntax accompanied by oral and written exercises. Prerequisite: JAPN 212.

**JAPN 312. Advanced Japanese Language and Culture II. 3 Credits.**

Review and development of oral communication skills with an emphasis on writing and vocabulary. Cultural and social topics are explored through authentic materials to familiarize students with a knowledge of Japan and its diverse people. Prerequisites: JAPN 311 or satisfactory score on the placement test.

**JAPN 395. Topics in Japanese. 1-3 Credits.**

A study of selected topics in Japanese. These courses will appear in the course schedule and will be more fully described by academic advisors. Prerequisites: JAPN 212 or the equivalent.

**JAPN 396. Topics in Japanese. 1-3 Credits.**

A study of selected topics in Japanese. These courses will appear in the course schedule and will be more fully described by academic advisors. Prerequisites: JAPN 212 or the equivalent.

**JAPN 495/595. Topics in Japanese. 1-3 Credits.**

A study of selected topics in Japanese. These courses will appear in the course schedule and will be more fully described by academic advisors. Prerequisites: third-year Japanese or permission of the instructor.

**JAPN 496/596. Topics in Japanese. 1-3 Credits.**

A study of selected topics in Japanese. These courses will appear in the course schedule and will be more fully described by academic advisors. Prerequisites: third-year Japanese or permission of the instructor.

## JST - Jewish Studies

### JEWISH STUDIES Courses

**JST 395. Topics in Jewish Studies. 3 Credits.**

This course addresses various topics in Jewish Studies. Prerequisites: junior standing or permission of instructor.

**JST 495/595. Topics in Jewish Studies. 3 Credits.**

This course addresses various topics in Jewish Studies. Prerequisites: Junior standing or instructor approval.

**JST 497. Research Project in Jewish Studies. 3 Credits.**

Independent reading and study of a topic to be selected in consultation with the director. Research proposal conference, research meetings and research project are required. Prerequisite: junior standing, 6 hours of course work in Jewish studies (to include PHIL 350), and approval of the director of Jewish Studies.

## LATN - Latin

### LATIN Courses

**LATN 101F. Beginning Latin I. 3 Credits.**

Introduction to Latin literature and Roman civilization.

**LATN 102F. Beginning Latin II. 3 Credits.**

Latin is immortal! Roman mythology, the destruction of Pompeii, and the rise of the Colosseum are some of the topics. Reading Latin and building your vocabulary are reinforced with interactive student activities and videos. Prerequisites: LATN 101F.

**LATN 201. Intermediate Latin I. 3 Credits.**

Latin Lives! Roman mythology, gladiator fights, and comedy in the theater are some of the topics. Advanced Latin readings and grammar are reinforced with interactive student activities and videos. Prerequisites: LATN 102F or satisfactory score on the placement test.

**LATN 202. Intermediate Latin II. 3 Credits.**

Carpe diem! The poetry of Catullus and Horace is funny, nasty and philosophical. Translate, analyze, and compare their poetry to our culture today. Also read parts of Ovid's Metamorphoses the mythology book which kept Latin alive through the Dark Ages until its resurgence in the Renaissance. Prerequisites: LATN 201.

**LATN 395. Topics in Latin. 1-3 Credits.**

A study of selected topics for elective credit. Study Roman literature, culture, and its influence. Translate, analyze, discuss relevance to today's world. Prerequisites: LATN 202 or equivalent.

**LATN 396. Topics in Latin. 1-3 Credits.**

A study of selected topics for elective credit. These courses will appear in the course schedule booklet and will be more fully described in a booklet distributed to all academic advisors. Prerequisite: LATN 202 or equivalent.

# MAE - Mechanical and Aerospace Engineering

## MECHANICAL AND AEROSPACE ENGINEERING Courses

**MAE 111. Mechanical and Aerospace Engineering Information Literacy and Research. 2 Credits.**

This course will introduce students to the needs, access, evaluation, use, impact and ethical/legal aspects of information, and to the application of information literacy and research in the fields of mechanical and aerospace engineering. Prerequisites: ENGN 110.

**MAE 195. Topics. 1-3 Credits.**

Permission of the chair required.

**MAE 201. Materials Science. 3 Credits.**

Principles of materials science with emphasis on the relationship between structure and properties and their control through composition and processing. Metals, polymers, ceramics, and composite materials are considered. Prerequisites: MATH 211.

**MAE 203. Mechanical Engineering Laboratory I - Materials Science. 1 Credit.**

This laboratory involves experiments demonstrating lecture material covered in the MAE 201 course. Pre- or corequisite: MAE 201 and CS 150.

**MAE 204. Engineering Mechanics I - Statics. 3 Credits.**

Introduction to mechanical engineering problems and their solutions through the study of statics of particles and rigid bodies. Emphasis will be placed on the relationship of the static loads with the mechanical properties of the materials being considered. Introduction to the concepts of stress and strain and internal forces as applied to static bodies. Corequisite: PHYS 231N. Prerequisites: MATH 211 with a grade of C or better.

**MAE 205. Dynamics. 3 Credits.**

Introduction to engineering problems and their solutions through a study of the dynamics of particles and rigid bodies. General force systems are studied including friction. Prerequisites: a grade of C or better in MAE 204 or CEE 204. Pre- or corequisite: MATH 212.

**MAE 220. Engineering Mechanics II - Solid Mechanics. 3 Credits.**

Introduction to concepts of stress, strain and their relation to each other. Stress and strain in axially loaded members and circular rods and tubes subjected to torsion. Normal and shear stress in beams under bending loads. Additional topics include bending deflection, transformation of stress and strain, Mohr's circles, statically indeterminate problems, combined stress and thin walled pressure vessels. Prerequisites: a grade of C or better in MAE 204 or CEE 204.

**MAE 225. Mechanical Engineering Laboratory II - Solid Mechanics. 1 Credit.**

Experimental study of the mechanical behavior of materials under axial, bending and torsional loads. Measurements of elastic properties and strengths. Statistical treatment of data. Use of strain gauges. Experiments with composite materials and piezo-electric transducers. Use of data acquisition system. Experiments parallel lectures in MAE 220. Corequisite: MAE 220. Prerequisites: CS 150.

**MAE 303. Mechanics of Fluids. 3 Credits.**

Fundamental concepts, fluid statics, basic equations in integral form, open-channel flow, Bernoulli's equation, dimensional analysis and similitude, incompressible viscous flow, pipe friction, boundary layers, introduction to differential analysis. Prerequisites: MATH 307, MATH 312, and a grade of C or better in MAE 205. Pre- or corequisite: MAE 305 and MAE 311.

**MAE 305. Mechanical Engineering Laboratory III - Thermo/Fluids. 1 Credit.**

An introduction to thermo-fluid experimentation and measurement; basic flow phenomena demonstrated; measurement techniques for flow temperature, pressure and properties; report writing and data reduction methods, including statistical treatment of data; formal oral reports. Pre- or corequisite: MAE 303 and MAE 311.

**MAE 311. Thermodynamics I. 3 Credits.**

Essential definitions of thermodynamics, first law, physical properties, ideal and real gases, second law, reversibility, irreversibility and consequences of thermodynamic cycles. Prerequisites: MATH 312. Pre- or corequisite: MAE 303 and MAE 305.

**MAE 312. Thermodynamics II. 3 Credits.**

Concepts and principles dealing with thermodynamic cycles, relations and generalized charts, mixtures of fluids, chemical reactions, chemical and phase equilibrium, thermodynamic aspects of fluid flow; introduction to compressible flow, isentropic and normal shock wave relations. Prerequisites: MATH 307, and a grade of C or better in MAE 303, and a grade of C or better in MAE 311.

**MAE 315. Heat and Mass Transfer. 3 Credits.**

Fundamental laws of heat transfer by conduction, convection, and radiation; boundary-layer concepts; simultaneous heat, mass, and momentum transfer. Prerequisites: A grade of C or better in MAE 303, and a grade of C or better in MAE 311.

**MAE 332. Mechanical Engineering Design I. 3 Credits.**

Introduction to machine design including review of stress and deflection analysis. Statistical considerations in design, strength of mechanical elements with emphasis on theories of failure and fatigue design. Prerequisites: MAE 201, a grade of C or better in MAE 205, a grade of C or better in MAE 220, and MET 120. Pre- or corequisite: MAE 225.

**MAE 340. Computational Methods in Mechanical Engineering. 3 Credits.**

A survey of modern computing techniques for mechanical engineers. Numerical algorithms are presented to solve practical problems in mechanical engineering as found in solid mechanics, fluid mechanics, dynamics, and heat transfer. Emphasis is on providing computational experience in applied numerical methods using computers. Topics include roots of equations, simultaneous equations, differentiation, integration, regression analysis, interpolation and differential equations. Analysis, understanding, and quantification of computational errors are included in all topics and applications. Prerequisites: CS 150, MATH 307 and MATH 312.

**MAE 367. Cooperative Education. 1-3 Credits.**

Available for pass/fail grading only. Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place. (qualifies as a CAP experience) Prerequisites: Approval by department and Career Management in accordance with the policy for granting credit for Cooperative Education programs.

**MAE 368. Internship. 1-3 Credits.**

Available for pass/fail grading only. Academic requirements will be established by the department and will vary with the amount of credit desired. Allows students to gain short duration career-related experience. (qualifies as a CAP experience) Prerequisites: Approval by department and Career Management.

**MAE 369. Practicum. 1-3 Credits.**

Academic requirements will be established by the department and will vary with the amount of credit desired. Allows students an opportunity to gain short duration career-related experience. (qualifies as a CAP experience) Prerequisites: Approval by department and Career Management.

**MAE 403/503. Flight Mechanics. 3 Credits.**

Aircraft concepts including performance prediction and optimization, flight and maneuver envelopes, and steady flight performance. Additional topics: longitudinal static stability and trim; aircraft dynamics; development, separation and solution of aircraft equations of motion; natural modes; dynamic stability; sensors and actuators; and design of stability augmentation and autopilot systems. Prerequisites: MAE 406 and MAE 436.

**MAE 404/504. Vibrations. 3 Credits.**

Free and forced vibrations of undamped and damped, single-degree of freedom, multi-degree of freedom, and continuous systems. Exact and approximate methods to find natural frequencies. Prerequisites: A grade of C or better in MAE 205, a grade of C or better in MAE 220; MAE 340 and MATH 312.

**MAE 406/506. Flight Vehicle Aerodynamics. 3 Credits.**

Inviscid flow concepts including: Euler equations, stream function, velocity potential, singularities, vorticity and circulation laws. Viscous flow topics including boundary layers, separation, and turbulent flow. In addition, external flows, lift and drag, thin airfoil theory, finite wing theory and airfoil design will be discussed. Prerequisites: A grade of C or better in MAE 303; MAE 312 and MAE 340.

**MAE 407/507. Ground Vehicle Aerodynamics. 3 Credits.**

Review of basic fluid mechanics of the incompressible flow of air. Introduction to bluff body aerodynamics, production and performance (race car) automotive aerodynamics, as well as truck and bus aerodynamics. Discussion of experimental and computational methods for evaluating vehicle aerodynamic performance. Optimization of high performance vehicle design for low drag and/or high downforce and the facilities and techniques required. Introduction to the aerodynamics of other surface vehicles such as sailboats and trains. Lecture and wind tunnel experiments. Prerequisites: A grade of C or better in MAE 303 or MET 330 or CEE 330.

**MAE 411/511. Mechanical Engineering Power Systems Theory and Design. 3 Credits.**

Thermodynamic properties of gases and vapors relating to power generating devices, work-energy relations, combustion, and heat exchangers. Performance analyses and design concepts of gas turbines, internal combustion engines, steam power plants and heat exchanger equipment from theoretical and applied viewpoints. Prerequisites: MAE 312 and MAE 315.

**MAE 412/512. Environmental Control. 3 Credits.**

Engineering principles as applied to the analysis and design of systems for automatically controlling man or machine environments. Course encompasses fundamentals of heating, ventilating, air conditioning, refrigeration, cryogenics, and design of building energy systems. Prerequisites: MAE 312 and MAE 315.

**MAE 413/513. Energy Conversion. 3 Credits.**

Introduction of relevant kinetic theory, solid state, and thermodynamic principles; operation and analysis of thermoelectric, photovoltaic, thermionic, magnetohydrodynamic devices, fuel cell, isotopic, and solar power generators. Course seeks to define engineering limits of converter efficiency and other performance criteria. Prerequisite: MAE 312.

**MAE 414/514. Introduction to Gas Dynamics. 3 Credits.**

One-dimensional compressible flow considering isentropic flow, normal shocks, flow in constant area ducts with friction, flow in ducts with heating and cooling, oblique shocks, Prandtl-Meyer expansions, shock-expansion theory, flow around diamond shaped airfoils, and wind tunnel mechanics. Prerequisites: A grade of C or better in MAE 303 and a grade of C or better in MAE 311.

**MAE 416/516. Introduction to Solar Energy Engineering. 3 Credits.**

Basic solar radiation processes, engineering analysis of solar collectors, energy storage methods, system design and simulation, applications to heating, cooling, and power generation. Prerequisites: MAE 315.

**MAE 417/517. Propulsion Systems. 3 Credits.**

Basic principles of design, operation and performance of propulsion systems - including turbojet, turboprop, turbofan, and ramjet engines. Introduction to chemical rockets, ion and plasma thrusters. Prerequisites: MAE 312 or MAE 414.

**MAE 420/520. Aerospace Structures. 3 Credits.**

Analysis of aircraft and space vehicle structural components. Effects of bending, torsion and shear on typical aerospace structural components, statically indeterminate beams, shear center and shear flow. Introduction to typical aerospace structures. Introduction to composite structures. Prerequisites: MAE 332.

**MAE 422/522. Modern Engineering Materials. 3 Credits.**

Limitations of conventional materials; inter-relationship among materials, design and processing, material selection criteria and procedures; strengthening mechanisms in metals; superelasticity; shape memory effect, amorphous metals; structure-property relationship in polymers; polymers crystallinity; thermoplastic and thermosets; high-temperature restraint polymers; ceramics; toughening mechanisms in ceramics. Prerequisites: MAE 201, MAE 203, and a grade of C or better in MAE 220; MAE 332.

**MAE 430. Solar Thermal Engineering. 3 Credits.**

Basic solar radiation processes on earth are followed by engineering analysis of collectors, energy storage methods, space heating and cooling application, systems design and dynamic simulation. Prerequisites: MAE 312 and MAE 315.

**MAE 431/531. Mechanisms Analysis and Design. 3 Credits.**

Basic relations necessary for analysis of plane motion mechanisms, numerical and analytical solutions for some of the basic mechanisms, methods of calculating rolling and sliding velocities and accelerations of contacting bodies, cams, and gears. Prerequisites: A grade of C or better in MAE 205; MAE 332 and MATH 312.

**MAE 433. Mechanical Engineering Design II. 3 Credits.**

Statistical considerations in design, strength of mechanical elements with emphasis on theories of failure and fatigue design in mechanical elements such as screws, fasteners, connections, welded joints, and flexible mechanical elements. Kinematic analysis, force analysis, and design of spur, helical, worm, and bevel gears. Antifriction bearings, lubrication and journal bearings, shaft design, mechanical spring design, design of clutches, brakes and couplings. Corequisite: MAE 434W. Prerequisites: MAE 332 and senior standing.

**MAE 434W. Project Design and Management I. 3 Credits.**

This course prepares students to complete their design projects in MAE 435. Lecture topics include engineering economics; project planning; costing and risk analysis; and product realization techniques. Course involves written and oral presentations for students to improve communication and teamwork skills. (qualifies as a CAP experience) (This is a writing intensive course.) Corequisite: MAE 433. Prerequisite: MAE 332 and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**MAE 435. Project Design and Management II. 3 Credits.**

Conceptual design ideas are expanded into detailed design ideas. Product realization is applied to complete hardware. Course covers Gantt charts, preliminary design, evaluation and trading matrices, detailed design and analysis, oral and technical reporting including cost analysis. Ethics and patent issues are also included. (qualifies as a CAP experience) Prerequisites: MAE 433 and MAE 434W.

**MAE 436. Dynamic Systems and Control. 3 Credits.**

Analysis and synthesis of feedback systems; functional description of dynamic systems; basic controllers; sensitivity, stability and error analysis; transient and steady-state response using computational techniques, root locus and frequency response methods; state-space analysis of control systems. Prerequisites: A grade of C or better in MAE 205; MATH 307 and MATH 312.

**MAE 438/538. Applied Analog and Digital Control. 3 Credits.**

Computer-aided analysis and design of practical control systems. Introduction to state-space, digital signal processing and digital control. Laboratory sessions on aliasing, analog, system identification, and real-time control. Prerequisites: MAE 436.

**MAE 440/540. Introduction to Finite Element Analysis. 3 Credits.**

Basic concepts of finite-element method, method of weighted residuals, interpolation functions, numerical implementation of finite-element method, applications to engineering problems such as beam deflection, heat conduction, and plane elastic problems. Prerequisites: MAE 340.

**MAE 441. Computer-Aided Design of Mechanical Systems. 3 Credits.**

Case studies are used to introduce students to CAD software; design processes involving modeling, analysis and design, and verification. Typical case studies are beam and plate designs, turbine blade design, and pipe networks. Advanced topics include: thermal stress analysis and plates and shells. Prerequisites: CS 150, and a grade of C or better in MAE 220; MATH 312. Pre- or corequisite: MAE 332.

**MAE 450/550. Principles of Naval Architecture. 3 Credits.**

Basic principles of naval architecture related to ship geometry, stability, strength, resistance, propulsion, vibration and motions in waves and controllability. Prerequisites: MATH 212.

**MAE 457/557. Motorsports Vehicle Dynamics. 3 Credits.**

Basic mechanics governing vehicle dynamic performance. Analytical methods in vehicle dynamics. Laboratory consists of various vehicle dynamics tests on model vehicles and full-size racecars. Prerequisites: A grade of C or better in MAE 205; MATH 307.

**MAE 460/560. Introduction to Space Systems Engineering. 3 Credits.**

Introduction to spacecraft systems starting from mission design and space environment considerations and proceeding through propulsion, altitude control, spacecraft structural design, thermal control, power and communications for spacecraft. Prerequisites: MATH 307 and PHYS 232N.

**MAE 467/567. Racecar Performance. 3 Credits.**

On-track performance of typical racecars (Legends and Baby Grand) to demonstrate and evaluate the interplay between vehicle aerodynamics, suspension system geometry adjustments, tire selection and operating pressure on overall racecar performance and handling. Laboratory testing via on-board instrumentation during skid pad and road course evaluation; computer simulation to investigate various car set-ups. Prerequisites: MAE 407 or MAE 507 and MAE 457 or MAE 557.

**MAE 477/577. High Performance Piston Engines. 3 Credits.**

A study of the fundamental principles and performance characteristics of spark ignition and diesel internal combustion engines. Overview of engine types and their operation, engine design and operating parameters; ideal and semi-empirical models of engine cycles; combustion, fluid flow and thermal considerations in engine design and performance. Laboratory evaluation of engine performance using flow and dynamometer systems. Prerequisites: MAE 312, MAE 315 or MET 300, MET 350.

**MAE 495/595. Topics in Mechanical and Aerospace Engineering. 1-3 Credits.**

Special topics of interest with emphasis placed on recent developments in mechanical and aerospace engineering or engineering mechanics. (offered fall, spring, summer) Prerequisites: Senior standing; Permission of the chair is required.

**MAE 496. Topics in Mechanical and Aerospace Engineering. 1-3 Credits.**

Special topics of interest with emphasis placed on recent developments in mechanical engineering or engineering mechanics. (offered fall, spring, summer) Prerequisites: senior standing; permission of the chair is required.

**MAE 497/597. Independent Study in Mechanical and Aerospace Engineering. 1-3 Credits.**

Individual analytical, computational, and/or experimental study in an area selected by student. Supervised and approved by the advisor. Prerequisites: Senior standing; Permission of the chair is required.

## MATH - Mathematical Sciences

### MATHEMATICAL SCIENCES Courses

**MATH 101M. An Introduction to Mathematics for Critical Thinking. 3 Credits.**

This course fulfills the math general education requirement for some majors in the College of Arts and Letters and the College of Education. It can also be used as a preparation for STAT 130M. An introduction to the ways in which modern mathematics can be used to analyze the modern world and make logical decisions. Topics include problem solving, sets, logic, consumer mathematics (loans, mortgages, annuities), elementary statistics, chaos and fractals.

**MATH 102M. College Algebra. 3 Credits.**

A basic course in algebra that emphasizes applications and problem-solving skills. Topics include properties of the real numbers, graphing of equations and inequalities, the algebra of rational expressions, and properties of exponentials and logarithms. This course fulfills the math general education requirement and can be used as a preparation for MATH 162M. MATH 101M is not a prerequisite for MATH 102M. Not open to students with credit for MATH 162M.

**MATH 103M. College Algebra with Supplemental Instruction. 3 Credits.**

This course covers the same content as MATH 102M. It is designed for students who must complete MATH 102M as part of their degree program, but who do not meet the prerequisites for MATH 102M (Math SAT greater than 450 and High School GPA of 3.0 or greater). MATH 103M may be used interchangeably with MATH 102M and may be used as a prerequisite requirement for any course that requires MATH 102M as a prerequisite. MATH 103M will require registration for a supplemental instruction session each week. Prerequisites: Math SAT less than or equal to 450, OR, High School GPA less than 3.0.

**MATH 162M. Precalculus I. 3 Credits.**

The first course in a two-course sequence designed to provide a strong preparation for calculus. Topics include algebraic operations, equations and inequalities, graphs and functions, polynomial functions, theory of equations, systems of equations, exponential functions, and logarithmic functions. Prerequisite: qualifying score on SAT or ACT, or qualifying score on a placement test administered by the University Testing Center or a grade of C or better in MATH 102M or MATH 103M.

**MATH 163. Precalculus II. 3 Credits.**

The second course in a two-course sequence designed to provide strong preparation for calculus. Topics include exponential and logarithmic functions/equations, trigonometric functions/equations, trigonometric identities, laws of sines and cosines, vectors, polar representation of complex numbers, binomial theorem, and conic sections. Prerequisite: A grade of C or better in MATH 162M.

**MATH 166. Precalculus I and II. 4 Credits.**

A one-semester precalculus course covering the topics of MATH 162M and MATH 163 at an accelerated pace. Not available to students with credit in MATH 163. Prerequisites: A grade of C or better in MATH 102M or MATH 103M.

**MATH 200. Calculus for Business and Economics. 3 Credits.**

The derivative and optimization, exponential functions and growth, and integration with applications to future value and consumer's and producer's surplus. Prerequisites: A grade of C or better in MATH 162M.

**MATH 211. Calculus I. 4 Credits.**

A first course in calculus and analytic geometry. Topics include differentiation and integration of algebraic and transcendental functions of one variable and applications. Prerequisites: A grade of C or better in MATH 163 or MATH 166.

**MATH 212. Calculus II. 4 Credits.**

A second course in calculus and analytic geometry. Topics include techniques of integration, polar coordinates, infinite series, solid geometry, vectors, lines and planes. Prerequisite: A grade of C or better in MATH 211.

**MATH 280. Transfer Credit for Ordinary Differential Equations. 3 Credits.**

This course is a VCCS transfer credit vehicle. Students who have earned transferable credit in MATH 279 or 291 at any member institution of the VCCS will be granted credit for MATH 280. The course will not be offered for credit by Old Dominion University. Cannot be used to substitute for MATH 307 for MATH majors or minors.

**MATH 285. Transfer Credit for Calculus III. 4 Credits.**

This course is a VCCS transfer credit vehicle. Students who have earned transferable credit for MATH 275 or 277 at any member institution of the VCCS will be granted credit for MATH 285. The course will not be offered for credit by Old Dominion University. Cannot be used to substitute for MATH 312 for MATH majors or minors.



**MATH 295. Topics in Mathematics. 1-5 Credits.**

Study of selected topics. Prerequisite: departmental permission.

**MATH 300. Number Systems. 3 Credits.**

Sets and systems of numbers, prime, integer, rational, irrational, real, complex and their properties. Representation of numbers. Divisibility, congruence, modular arithmetic, elementary number theory and symbolic logic. (May not be used to satisfy the upper-division elective requirement of the math majors program.) Prerequisite: A grade of C or better in MATH 102M or MATH 103M or MATH 162M.

**MATH 302. Geometry. 3 Credits.**

Elementary plane and solid Euclidean geometry with proofs and applications. Topics include angles, triangles, congruence, quadrilaterals, circles, similarity, perimeter, area, volume, polygons, plane and solid constructions. Geometer's Sketchpad software used to discover geometric properties. (May not be used to satisfy the upper-division elective requirement of the math majors program.) Prerequisite: A grade of C or better in MATH 102M or MATH 103M or MATH 162M.

**MATH 305. Discrete Math. 3 Credits.**

Topics: Vectors and matrices, linear programming, operations on sets, combinatorics, permutations, combinations, elementary probability, logic, relations and functions, induction, graphs and trees, applications. (May not be used to satisfy the upper-division elective requirement of the math majors program.) Prerequisite: A grade of C or better in MATH 102M or MATH 103M or MATH 162M.

**MATH 307. Ordinary Differential Equations. 3 Credits.**

Topics include first order differential equations and systems, second and higher order linear equations, solution by series and Laplace transform, and applications. Prerequisite: A grade of C or better in MATH 212.

**MATH 311W. Abstract Algebra. 3 Credits.**

Topics include introduction to logic and methods of proof; sets, relations, and functions; elementary group and ring theory. (This is a writing intensive course.) Prerequisite: A grade of C or better in ENGL 211C or 221C or 231C; MATH 212 or departmental permission.

**MATH 312. Calculus III. 4 Credits.**

A third course in calculus and analytic geometry. Topics include vector functions, partial derivatives, multiple integrals and an introduction to vector calculus. Prerequisite: A grade of C or better in MATH 212.

**MATH 316. Introductory Linear Algebra. 3 Credits.**

An introduction to linear algebra. Topics include matrices, vectors, vector spaces, linear transformations, eigenvalues and eigenvectors. Prerequisites: A grade of C or better in MATH 212.

**MATH 317. Calculus IV: Introductory Analysis. 3 Credits.**

An introduction to real analysis. Topics covered include completeness and topological properties of real line, theory of sequences, limits of functions, continuity, Fundamental Theorem of calculus, Leibniz's rule. Prerequisites: A grade of C or better in MATH 212.

**MATH 335. Number Systems and Discrete Mathematics. 3 Credits.**

Estimation and other applications to real world problems, using elementary principles of algebra, geometry, number theory, number systems, and discrete mathematics. (May not be used to satisfy the upper-division elective requirement of the math majors program.) Prerequisite: A grade of C or better in MATH 102M or MATH 103M or MATH 162M.

**MATH 367. Cooperative Education. 1-3 Credits.**

Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place. Available for pass/fail grading only. May be repeated for credit. (qualifies as a CAP experience) Prerequisite: approval by the department and Career Management in accordance with the policy for granting credit for Cooperative Education programs.

**MATH 375. Advanced Concepts for Secondary Educators: Function and Modeling. 3 Credits.**

This course engages students in explorations and laboratory activities designed to strengthen and expand their knowledge of the topics found in college mathematics, and in particular, students will delve into and illuminate the connections between secondary and college mathematics by exploring and highlighting the basic secondary school topics that need to be mastered in order to solve problems in college mathematics. Through this process, students will achieve mastery of topics they will be teaching in secondary mathematics and understand the connection between the high school curriculum and their students' success in college and in the workplace. Prerequisite: MATH 307.

**MATH 395. Topics in Mathematics. 1-3 Credits.**

Study of selected topics. Prerequisite: departmental permission.

**MATH 399. Putnam Exam Problems and Related Topics. 1 Credit.**

This course is designed to help students prepare for the Putnam Exam - an annual national mathematical competition. Problems from previous Putnam Exams and materials related to the solution of such problems will be considered. Prerequisites: A grade of C or better in MATH 212.

**MATH 400/500. History of Mathematics. 3 Credits.**

This course considers some of the major events in the development of mathematics from ancient times through the seventeenth century, including the discovery of incommensurability, the origins of the axiomatic method, trigonometry, solution of equations, calculation of areas and volumes, analytic geometry, probability, and calculus. Students will be graded on tests which consist mostly of problems typical of the periods considered. Prerequisites: MATH 311W or MATH 316 or MATH 317.

**MATH 401/501. Partial Differential Equations. 3 Credits.**

Not available to students with credit in MATH 691. Separation of variable techniques, Sturm-Liouville systems, generalized Fourier series, orthogonal functions of the trigonometric, Legendre and Bessel type boundary value problems associated with the wave equation and the heat conduction equation in various coordinate systems, applications to physics and engineering. Prerequisites: A grade of C or better in MATH 307 and MATH 312.

**MATH 404/504. Fundamental Concepts of Geometry. 3 Credits.**

Fundamentals of Euclidean and non-Euclidean geometry. Alternatives to Euclidean geometry are examined using a variety of mathematical techniques. Special topics such as "Taxicab" geometry, the hyperbolic plane, the art of M.C. Escher, and the mathematics of maps may be included. Prerequisites: MATH 311W.

**MATH 406/506. Number Theory and Discrete Mathematics. 3 Credits.**

A survey course. Topics include the prime number theorem, congruences, Diophantine equations, continued fractions, quadratic reciprocity, combinatorics, logic, graphs, trees, algorithms, coding and linear programming. Prerequisites: MATH 311W and MATH 316.

**MATH 408/508. Applied Numerical Methods I. 3 Credits.**

An introduction to the numerical methods commonly used by scientists and engineers. Topics include solutions of equations of one variable, direct methods for solving linear systems, matrix factorization, stability analysis, iterative techniques, polynomial interpolation, numerical differentiation and integration, approximation theory, and initial and boundary value problems for ordinary differential equations. Prerequisites: A grade of C or better in MATH 316; CS 150 or equivalent programming ability also required.

**MATH 409/509. Applied Numerical Methods II. 3 Credits.**

Topics include least squares problems, the QR factorization, the conjugate gradient method, Householder transformation and the QR method for approximating eigenvalues and singular values of a matrix. For applications, the finite difference method and the finite element method for solving partial differential equations, trigonometric interpolation and FFT as well as introductory study of optimization are discussed. Prerequisites: A grade of C or better in MATH 408/MATH 508.

**MATH 417/517. Intermediate Real Analysis I. 3 Credits.**

A rigorous course in classical real analysis. Topics include the topology of Euclidean  $n$ -space, properties of vector valued functions of several variables such as limits, continuity, differentiability and integrability, pointwise and uniform convergence of sequences and series of functions; Fourier series. Prerequisite: a grade of C or better in MATH 317.

**MATH 418/518. Intermediate Real Analysis II. 3 Credits.**

A rigorous course in classical real analysis. Topics include the topology of Euclidean  $n$ -space, properties of vector valued functions of several variables such as limits, continuity, differentiability and integrability, pointwise and uniform convergence of sequences and series of functions; Fourier series. Prerequisite: A grade of C or better in MATH 417.

**MATH 420/520. Applied Mathematics I: Biomathematics. 3 Credits.**

An introduction to current developments in the mathematical investigation of biological problems. Topics include scaling systems of differential equations, stability, perturbation methods, bifurcation phenomena and wave propagation. Applications are chosen from interacting populations, transport and reaction diffusion kinetics, transmission of nerve impulses, and cardiovascular modeling. Prerequisite: A grade of C or better in MATH 307.

**MATH 421/521. Applied Mathematics II: Mathematical Modeling. 3 Credits.**

A one semester course in formulating, evaluating and validating mathematical models of physical phenomena. Models of traffic flow, mechanical vibrations, combustion, quantum mechanics, wave propagation or other fields of applied mathematics will be examined. Techniques learned in previous courses are used to simplify, analyze and solve these models. New methods introduced include phase-plane analysis, characteristics, calculus of variations and perturbation methods. Prerequisites: A grade of C or better in MATH 307, MATH 312, MATH 316, and MATH 317.

**MATH 422/522. Applied Complex Variables. 3 Credits.**

Not available to students with credit in MATH 692. Topics include complex numbers, analytical functions and their properties, derivatives, integrals, series representations, residues and conformal mappings. Applications of the calculus of residues and mapping techniques to the solution of boundary value problems in physics and engineering. Prerequisite: A grade of C or better in MATH 312.

**MATH 427/527. Applied Mathematics III: Elasticity. 3 Credits.**

An introduction to the mathematical theory of linear and non-linear elastic continua. Topics include vectors, tensors, deformation, stress, nonlinear constitutive theory, exact solutions, infinitesimal theory, antiplane strain, plane strain, plane stress, extension, torsion, bending and elastic wave propagation. Prerequisites: A grade of C or better in MATH 307 and MATH 312.

**MATH 428/528. Applied Mathematics IV: Fluid Mechanics. 3 Credits.**

A mathematical investigation of the differential equations governing fluid flow with an emphasis on steady state incompressible flows. The Navier-Stokes equations are derived and some exact solutions are presented including the potential flow solutions. Topics therefore include classical ideal fluid flow and its complex variable representation, various approximations to the Navier-Stokes equations, boundary layer theory, and also surface and internal gravity wave motion, aspects of hydrodynamic stability theory and convection. Other topics may be introduced by the instructor. Corequisite: MATH 401. Prerequisites: A grade of C or better in MATH 307 and MATH 312.

**MATH 457/557. Mathematics in Nature. 3 Credits.**

A calculus and differential equations based description of many patterns observable in the natural world including wave motion in the air, oceans, rivers, and puddles; rainbows, halos and other meteorological phenomena; arrangement of leaves, petals and branches; height of trees; river meanders; animal and insect markings; mudcracks; spider webs; and others. Partial differential equations will be discussed as needed but a knowledge of ordinary differential equations will be assumed. Prerequisite: A grade of C or better in MATH 307.

**MATH 496/596. Topics in Mathematics. 1-3 Credits.**

Study of selected topics. Prerequisite: permission of the instructor.

**MATH 498/598. Tutorial Work in Special Topics in Mathematics. 1-3 Credits.**

Independent study under the direction of an instructor including library research and reports. Prerequisite: permission of the instructor.

## MDTS - Medical Diagnostic and Translational Sciences

### MEDICAL DIAGNOSTIC AND TRANSLATIONAL SCIENCES Courses

**MDTS 400/500. Principles of Molecular Pathology and Clinical Diagnostics. 3 Credits.**

Basic concepts of molecular pathology & clinical diagnostics including nucleic acids, DNA replication, transcription, proteins, mutations and chromosome changes that underlie inherited and acquired/infectious disease, inheritance patterns and genetics as applied to oncology, cardiac disease and organ transplants. Covers emerging molecular/cytologic/histologic methods (amplification, hybridization and microarrays) to detect disease markers, monitor therapy and assess identity; pharmacogenomics and legal/ethical issues of genetic testing. Prerequisites: BIOL 250, BIOL 251; CHEM 211, CHEM 212 and permission of instructor.

**MDTS 401/501. Molecular Diagnostics Laboratory. 3 Credits.**

Course includes hands-on experience with or discussion of diagnostics instrumentation and assays using nucleic acid and protein extraction, gel electrophoresis, hybridization techniques, standard and real time polymerase chain reaction (PCR), reverse transcription, DNA sequencing, autoradiography, flow cytometry, microarrays and proteomics-based methods. Pre- or corequisite: MLRS 400 or permission of the instructor.

## MEDT - Medical Technology

### MEDICAL TECHNOLOGY Courses

**MEDT 210. Orientation to Medical Technology. 1 Credit.**

An introduction to the profession of medical technology. Professional, ethical and operational issues will be discussed.

**MEDT 300. Phlebotomy Procedures of Nursing Personnel. 1 Credit.**

This entry-level course, delivered in lecture/lab format, will provide direct instruction and practice in all phlebotomy techniques used in the collection of blood from infants, children, and adults. Techniques will include capillary and venipuncture methods that use multi-sampling devices as well as techniques used for special populations, patients in isolation, and ER trauma draws. Prerequisite: permission from the School of Nursing. Prerequisite: NURS 303.

**MEDT 307. Clinical Methods in Microbiology. 2 Credits.**

Laboratory techniques in the diagnosis of clinically relevant microorganisms. Corequisite: MEDT 308.

**MEDT 308. Clinical Microbiology. 3 Credits.**

A fundamental course in microbiology that includes bacterial growth, synthesis, differentiation, microbial nutrition and metabolism. Prerequisites: BIOL 115N and BIOL 116N or BIOL 121N, BIOL 122N, BIOL 123N, and BIOL 124N; CHEM 211 is recommended or permission of the instructor.

**MEDT 309. Medical Bacteriology. 3 Credits.**

A comprehensive survey of bacteria, including colonial morphology, cultural characteristics, biochemical identification, pathogenicity, epidemiology, and treatment. Prerequisites: MEDT 307 and MEDT 308.

**MEDT 310. Urinalysis and Body Fluids. 1 Credit.**

A study of the chemical, physical and microscopic analysis of human urine and other body fluids, with abnormal results interpreted and correlated to disease processes, and cancer cytology of the urinary tract. Corequisite: MEDT 313. Prerequisites: BIOL 250 and BIOL 251 or permission of the instructor.

**MEDT 311. Hematology. 3 Credits.**

The study of the principles of the formation and development of blood, including the interpretation of normal and abnormal blood morphology and diagnostic procedures in the investigation of hematological disorders. Corequisite: MEDT 312. Prerequisites: BIOL 250 and 251 or permission of the instructor.

**MEDT 312. Hematology Laboratory. 1 Credit.**

Laboratory methods utilizing microscopy and other analytical procedures in the diagnosis and investigation of hematological disorders. Corequisite: MEDT 311.

**MEDT 313. Diagnostic Methods in Urinalysis. 1 Credit.**

Laboratory experience in the chemical, physical, and microscopic examination of the urine and body fluids with emphasis on quality control, osmometry, and disease correlates. Corequisite: MEDT 310. Prerequisites: BIOL 250 or equivalent.

**MEDT 315. Clinical Laboratory Diagnosis. 3 Credits.**

An introduction to clinical diagnostic principles utilized in immunology, serology, and hemostasis. Prerequisites: students must be graduates of a clinical laboratory training program.

**MEDT 319. Medical Bacteriology Methods. 2 Credits.**

Laboratory methods emphasizing isolation, identification and media requirements for pathogenic microorganisms. Corequisite: MEDT 309.

**MEDT 320. Blood Collection Techniques. 2 Credits.**

Laboratory methods in the procurement of blood by capillary, venipuncture and arterial draws, analytical variables, special phlebotomy tests, isolation techniques, safety, forensic, molecular, legal and ethical implications, pediatric, geriatric, and compromised patient concerns. All students must submit to venipuncture by fellow students. Prerequisites: BIOL 250 or equivalent or permission of the instructor.

**MEDT 322. Phlebotomy Internship. 2 Credits.**

A 120-hour clinical internship for those desiring to qualify for the ASCP certification exam. Prerequisites: MEDT 320.

**MEDT 324. Clinical Instrumentation and Electronics. 3 Credits.**

A course covering the theory, operation, selection, maintenance and quality control of instruments in the clinical laboratory. Instruments discussed include spectrophotometers, flame photometry, atomic absorption, fluorometry, gas and liquid chromatography, mass spectroscopy, chemiluminescence, immunochemical and nephelometric methods, electrophoresis, radiation detection and dosimetry, osmometry, electrochemistry and applications to molecular diagnostic and forensic testing, and basic electronic applications. Statistical applications to data analysis of both instrument and method comparisons, trouble shooting and quality control in the clinical lab. Corequisite: MEDT 325. Prerequisites: CHEM 211 or CHEM 321, MATH 102M or permission of the instructor.

**MEDT 325. Clinical Instrumentation Methods. 1 Credit.**

A laboratory course designed for students entering the clinical laboratory field. The course includes the instrumental and data processing techniques required for the clinical analysis of body fluids as well as applied statistical techniques to the interpretation of laboratory data, and statistical comparison methods. Lab to include lab sessions in molecular diagnostic testing, comparison studies, quality control, calibration, maintenance, and trouble shooting of clinical chemistry analytics. Prerequisites: MATH 102M, CHEM 121N, CHEM 122N, CHEM 123N, CHEM 124N, and CHEM 211.

**MEDT 326. Immunohematology. 3 Credits.**

The study of the identification of blood group antigens and antibodies, standard testing procedures, decision criteria for component selection, and regulations of blood banks and transfusion services. Corequisite: MEDT 336. Prerequisites: MEDT 311, MEDT 330, MEDT 331, BIOL 250, and BIOL 251 or permission of the instructor.

**MEDT 327. Hemostasis. 1 Credit.**

The study of the fundamentals of hemostasis, emphasizing principles, evaluation techniques, and diagnostic applications. Class meets the first 7 weeks of the semester. Prerequisites: MEDT 311, MEDT 312 or permission of the instructor.

**MEDT 330. Clinical Immunology/Serology. 2 Credits.**

The study of the body's immune response, its cellular and non-cellular components, in-vitro manifestations, diagnostic techniques and interpretations related to the investigation and diagnosis of infectious and non-infectious disease states. Corequisite: MEDT 331. Prerequisites: BIOL 115N, BIOL 250 and BIOL 251 or permission of the instructor.

**MEDT 331. Clinical Immunology/Serology Laboratory. 1 Credit.**

Laboratory methods emphasizing in-vitro antigen and antibody reactions used to aid in the diagnosis of infectious and non-infectious disorders. Corequisite: MEDT 330.

**MEDT 336. Immunohematology Laboratory. 1 Credit.**

Laboratory methods emphasizing procedures that lead to the identification of blood group antigens and antibodies and the selection of therapeutic components necessary for making transfusion-related decisions. Corequisite: MEDT 326.

**MEDT 337. Advanced Hematology. 1 Credit.**

The microscopic study of blood cells in blood and body fluids, emphasizing morphologic identification and correlation of laboratory data in order to identify specific disease states. Class meets the second 7 weeks of the semester. Prerequisites: MEDT 311 and MEDT 312 or permission of the instructor.

**MEDT 339. Medical Parasitology and Mycology Laboratory. 1 Credit.**

Laboratory methods emphasizing the identification of medically relevant parasites and fungi. Corequisite: MEDT 340.

**MEDT 340. Medical Parasitology, Mycology, and Virology. 1 Credit.**

A study of the medically important parasites, fungi, and viruses, and their medical significance. Prerequisites: MEDT 307, 308 or permission of the instructor.

**MEDT 350. Urinalysis. 1 Credit.**

A study of the chemical, physical and microscopic analysis of human urine and body fluids, anatomy and physiology, and path physiology, with abnormal results interpreted and correlated to disease processes. Restricted to distance education students. Prerequisites: BIOL 250 and BIOL 251 or permission of the instructor.

**MEDT 351. Clinical Biochemistry. 3 Credits.**

An introduction to the applications of biochemistry and clinical testing in the diagnosis of human disease. Practice given in the interpretation of laboratory data in the areas of carbohydrate, protein, lipid, genetic disorders, liver, renal, pancreatic, G.I., enzymatic, and cardiac testing. Also enzyme kinetics, electrolytes, acid base physiology, tumor markers, endocrinology, pharmacokinetics, therapeutic drug monitoring, and molecular diagnostics. Special emphasis on specimen collecting, pre- and post-analytical variables, and case studies. Prerequisites: BIOL 250, BIOL 251, CHEM 211, and CHEM 212, or permission of the instructor.

**MEDT 401. General Pathology. 3 Credits.**

This course is an overview of general disease processes and causes in the human. All body systems will be covered including respiratory, gastrointestinal, circulatory, nervous, reproductive, and urinary. Aging, dietary, and stress factors will be discussed in the disease process. Bacteria, fungi, and viruses will be discussed in general and for each body system. Neoplasms will be covered for each body site. This course will be of benefit to anyone interested in diseases of the human body or entering the medical field. (cross listed with CYTO 404) Pre- or corequisite: BIOL 250 and BIOL 251 or equivalent.

**MEDT 403W/503. Management in the Clinical Setting. 3 Credits.**

A course concerned with organization and management in the clinical setting including personnel supervision, planning, equipment justification, quality assurance, data processing, budgeting, fiscal techniques, marketing, regulatory agencies, educational methodologies, current issues, as well as legal and ethical considerations. (This is a writing intensive course.) Prerequisites: junior standing and a grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C.

**MEDT 404. Clinical Hematology Practicum. 4 Credits.**

Direct clinical experience offered in automated and manual hematology procedures used in distinguishing blood dyscrasias and coagulation abnormalities. (qualifies as a CAP experience) Prerequisites: MEDT 311, MEDT 312, MEDT 327, MEDT 337, and permission of the program director.

**MEDT 406. Clinical Microbiology Practicum. 5 Credits.**

Direct clinical experience offered in isolating and identifying human pathogens such as bacteria, fungi, and parasites from various clinical specimens. (qualifies as a CAP experience) Prerequisites: MEDT 307, MEDT 308, MEDT 309, MEDT 319 and permission of the program director.

**MEDT 440/540. Statistical Applications and Data Analysis in the Clinical Laboratory. 3 Credits.**

Topics include review of basic statistics used in the laboratory; use of statistics for quality control, reference range determination, method comparisons, test utility assessment, techniques for searching the literature and assessing quality and applicability of published studies; and data organization and retrieval via queries. Students will perform projects, preferably using actual laboratory data, that relate to lecture topics. Prerequisites: STAT 130M and permission of the instructor.

**MEDT 441. Clinical Hematology Competencies. 1 Credit.**

Demonstration of stated clinical laboratory competencies in an approved laboratory setting within the discipline of hematology. Prerequisites: MEDT 311 and MEDT 315.

**MEDT 442. Clinical Microbiology Competencies. 1 Credit.**

Demonstration of stated clinical laboratory competencies in an approved laboratory setting within the discipline of clinical microbiology. Prerequisites: MEDT 309.

**MEDT 443. Clinical Chemistry Competencies. 1 Credit.**

Demonstration of stated clinical laboratory competencies in an approved laboratory setting within the discipline of clinical chemistry. Prerequisites: MEDT 324 and MEDT 351.

**MEDT 444. Clinical Blood Bank Competencies. 1 Credit.**

Demonstration of stated clinical laboratory competencies in an approved laboratory setting within the discipline of blood banking. Prerequisites: MEDT 315 and MEDT 326.

**MEDT 445. Advanced Clinical Practicum. 3 Credits.**

A project-based advanced clinical experience for laboratory practitioners emphasizing enhancement of basic procedures and techniques and development of management, research, computer and educational skills, resulting in a written paper and oral presentation. (qualifies as a CAP experience) Prerequisites: MEDT 440 or approved research methods course; or permission of instructor.

**MEDT 452. Clinical Biochemistry Practicum. 5 Credits.**

Direct clinical experience offered in automated and manual clinical chemistry determinations with emphasis on the principles, instrumentation, interpretation, and diagnostic significance. (qualifies as a CAP experience) Prerequisites: MEDT 324, MEDT 325, MEDT 351, and permission of the program director.

**MEDT 454. Clinical Blood Bank Practicum. 4 Credits.**

Direct clinical experience offered in the theories and principles of blood banking with emphasis on the instruction of technical procedures used in an AABB approved blood bank. (qualifies as a CAP experience) Prerequisites: MEDT 311, MEDT 312, MEDT 326, MEDT 336, and permission of the program director.

**MEDT 457. Medical Technology Seminar. 1 Credit.**

Independent study in all the areas of the clinical laboratory, culminating in a comprehensive final exam in all areas of medical technology. Excellent review for certification exams. Prerequisites: permission of the program director.

**MEDT 458. Clinical Elective Practicum. 1 Credit.**

Directed internship in any clinical area of interest approved by the clinical instructor and program director. (qualifies as a CAP experience) Prerequisites: permission of the program director.

**MEDT 495. Special Topics in Medical Technology. 1-3 Credits.**

The advanced study of selected topics within the medical field. Prerequisites: permission of the program director.

**MEDT 497. Directed Study in Medical Technology. 1-3 Credits.**

Supervised experience in medical technology specialties, allowing students to pursue areas of interest under faculty direction. Prerequisites: permission of the program director.

**MEDT 498. Clinical Research Methods. 3 Credits.**

An introduction to clinical research methods to include sampling techniques, data collection and analysis, inferential statistics, multivariate analysis, hypothesis testing and research design. The student will be expected to develop a research proposal based upon a critical review of the literature. Prerequisites: STAT 130M or permission of the instructor.

## MET - Mechanical Engineering Technology

### MECHANICAL ENGINEERING TECHNOLOGY Courses

**MET 120. Computer Aided Drafting. 3 Credits.**

Lecture 2 hours; laboratory 2 hours; 3 credits. Computer based drafting methods are taught with a major emphasis on 'Hands On' practice using 2-D AutoCAD software in the computer lab, along with the various methods of editing, manipulation, visualization and presentation of technical drawings. This course includes the basic principles of engineering drawing/hand sketching, dimensioning and tolerancing.

**MET 200. Manufacturing Processes and Methods. 3 Credits.**

Lecture 3 hours; 3 credits. Application and characteristics, both physical and chemical, of the materials most commonly used in industry as well as procedures and processes used in converting raw materials into a finished product.

**MET 225. Material Science Laboratory. 1 Credit.**

A laboratory course dealing with the standard methods of inspecting and testing materials used in engineering applications with emphasis on laboratory reports, including presentation and interpretation of experimental data. Pre- or Corequisite: CET 220.

**MET 240. Computer Solid Modeling. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MET 120. A treatment of modern 3-D parametric solid modeling techniques including introduction of the software utilized sketching, parts and assembly creation techniques, orthographic views extraction and manufacturing drawing generation. Presentations include exploded views and animation.

**MET 295. Topics. 1-3 Credits.**

Study of selected topics.

**MET 300. Thermodynamics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: CHEM 121N, MATH 211 and a grade of C or better in PHYS 111N or PHYS 231N. The basic laws of thermodynamics, properties of fluids, heat, and work and their applications in processes and cycles and an introduction to conduction heat transfer.

**MET 305. Fundamentals of Mechanics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: PHYS 111N and MATH 211. Selected topics in statics and strength of materials are applied to mechanical engineering technology. Coverage includes force systems, equilibrium, friction, and stress-strain relationships and their application to the mechanical behavior of materials.

**MET 310. Dynamics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: MATH 211, and a grade of C or better in CET 200, and a grade of C or better in PHYS 111N or PHYS 231N. A fundamental treatment of coplanar and three-dimensional kinematics and kinetics of particles and rigid bodies, including relative motion, mass moments of inertia. Newton's laws, work and energy, impulse and momentum, and simple vibrations.

**MET 320. Design of Machine Elements. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MATH 211, a grade of C or better in CET 220 and PHYS 111N or PHYS 231N. A rapid review of the fundamental principles of strength of materials and working stresses followed by practical analyses of fundamental machine elements such as shafts, springs, and screws.

**MET 330. Fluid Mechanics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: MET 310. The study of fluid statics and dynamics, including momentum, energy, Bernoulli's equation, laminar and turbulent fluid flow and friction in pipes, fluid machinery, and open-channel flow.

**MET 335W. Fluid Mechanics Laboratory. 1 Credit.**

Laboratory 2 hours; 1 credit. Prerequisite: A grade of C or better in ENGL 211C or 221C or 231C; Pre- or corequisite: MET 330. A laboratory course dealing with the verification of fluid equations and principles and the characteristics of fluid machinery with emphasis on laboratory report writing, including presentation and interpretation of experimental data.

**MET 350. Thermal Applications. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MET 300. A study of basic applications of thermodynamics. Topics include the basic steam and gas turbine power plant, introduction to refrigeration systems, psychometrics, basic conduction and convection heat transfer including heat exchangers and surveys of other energy conversion systems.

**MET 367. Cooperative Education. 1-3 Credits.**

1-3 credits (may be repeated for credit). Prerequisite: approval by the department and Career Management in accordance with the policy for granting credit for Cooperative Education programs. Available for pass/fail grading only. Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and the Career Management program prior to the semester in which the work experience is to take place. (offered fall, spring, summer) (qualifies as a CAP experience).

**MET 368. Internship. 1-3 Credits.**

1-3 credits. Prerequisite: approval by department and Career Management. Available for pass/fail grading only. Academic requirements will be established by the department and will vary with the amount of credit desired. Allows students to gain short duration career-related experience. (qualifies as a CAP experience).

**MET 369. Practicum. 1-3 Credits.**

1-3 credits. Prerequisite: approval by department and Career Management. Available for pass/fail grading only. (qualifies as a CAP experience).

**MET 370. Automation and Controls. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: MATH 211 and EET 350 and 355. A study of the design and analysis of feedback control system. Includes the fundamentals of programmable controllers as well as practical applications of interfacing mechanical, electrical, pneumatic and hydraulic feedback control circuits. Computer simulation software is used to model system responses.

**MET 386. Automation and Controls Laboratory. 1 Credit.**

Laboratory 2 hours; 1 credit. Pre- or corequisite: MET 370. Laboratory and computer simulation of control systems including programmable controllers as well as practical applications of interfacing mechanical, electrical and pneumatic control systems.

**MET 387. Power and Energy Laboratory. 2 Credits.**

Lecture 1 hour; laboratory 2 hours; 2 credits. Prerequisites: MET 335W and MET 350. Experiments dealing with applied thermodynamics, mechanical power and energy systems with emphasis on laboratory report writing, including presentation and interpretation of experimental data.

**MET 395. Topics. 1-3 Credits.**

Study of selected topics. Prerequisite: permission of the instructor.

**MET 396. Topics. 1-3 Credits.**

Study of selected topics. Prerequisite: permission of the instructor.

**MET 400. Computer Numerical Control in Production. 3 Credits.**

Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisites: Senior standing. Principles of computer numerical control consistent with most recently developed standards, industry practices, and CAD/CAM systems including such topics as types of CNC machines, CNC milling, CNC turning and CNC electro-discharge machinery. A significant portion of the course includes programming in multiple axes.

**MET 410. Advanced Manufacturing Processes. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MET 200. A course in nontraditional manufacturing processes including ultrasonic machining, abrasive jet machining, waterjet cutting, electromechanical machining, electrical discharge machining, plasma arc machining and chemical milling. Semester project is required. (qualifies as a CAP experience).

**MET 415. Introduction to Robotics. 3 Credits.**

Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisites: MET 310, and EET 350. An introductory course in robotics dealing with the history and development of robots, mechanical components and control systems, actuators, robot programming and utilization. Included are laboratory experiments in robot motion and programming.

**MET 426. Introduction to Mechatronics. 3 Credits.**

Lecture, 3 hours; 3 credits. Prerequisite: MATH 211 and EET 350 and EET 355. A study of the mechatronics concepts and their application on actual problems encountered in engineering practice. Includes the basics of electromechanical systems, electrical circuits, solid-state devices, digital circuits and motors, all of which are fundamental to understanding mechatronic systems.

**MET 427. Mechatronic System Design. 3 Credits.**

Lecture, 3 hours; 3 credits. Prerequisite: MET 426. A study of the integrated modeling and optimal design of a physical system, which includes sensors, actuators, electronic components, and its embedded digital control system. Includes simultaneous optimal design practice with respect to the realization of the design specifications related to different engineering domains.

**MET 430. Mechanical Subsystem Design. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MET 320. Fundamental principles required for the correct design of the separate elements which compose the machine with attention given to problems of synthesis and the interrelationships of the design of elements within the sub-assembly. Topics include stress analysis of screws, belts, clutches, brakes, chains and thin and thick cylinders, and lubrication and bearings.

**MET 434. Introduction to Senior Project. 1 Credit.**

Lecture 1 hour; 1 credit. Prerequisite: senior standing. This course must be taken in the semester prior to the Senior Project course. A collection of career-related topics pertaining to engineering technology. Topics include engineering codes and standards, engineering ethics, technical report writing, job search and resume writing techniques, patents and property rights, and professional engineering licensure. The course concludes with the selection of the student's project topic for the subsequent Senior Project course.

**MET 435W. Senior Design Project. 3 Credits.**

Lecture 1 hour; laboratory 6 hours; 3 credits. Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; MET 434 and senior standing. A capstone course exercising upper level course work involving independent or group design projects. Students are required to collect data and synthesize a mechanical design. Submission of written reports and a final oral presentation are required. (qualifies as a CAP experience) (This is a writing intensive course.).

**MET 440. Heat Transfer. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MET 300. A study of conduction, convection and radiation heat transfer and heat exchangers. Emphasis is on applications and problem solving using current techniques, and modern correlations.

**MET 445. Computer Integrated Manufacturing. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: senior standing. Principles of computer integrated manufacturing, system integration, architecture and data base development. Topics include part design specifications, process engineering, fixed automation and process planning.

**MET 450. Energy Systems. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MET 350. A study of the application of thermodynamics to power plants, engines, compressors, turbines, and associated systems. A detailed study is made of fossil fuel power plants with an introductory study of nuclear power and other energy conversion systems.

**MET 455. Lean Engineering. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: Senior standing. This course looks at the history of lean and six sigma philosophies, their principles and implementation methodologies for creating a world class enterprise. Topics in Lean include five s, value stream mapping, cellular manufacturing, pull system, performance metrics, Lean supplier network, Lean product development and Lean implementation models. Semester research report is a course requirement. Class activities may involve physical simulation of production environment.

**MET 460. Refrigeration and Air Conditioning. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: MET 330 and 350. The design and application of refrigeration and air conditioning systems. Studies are made of compressors, condensers, evaporators, psychometric processes, load calculations and air distribution systems. High performance vapor compression systems, absorption systems and other cycles are analyzed.

**MET 465. Geometric Dimensioning and Tolerancing. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: Senior Standing. Methods and rules of dimensioning and tolerancing, calculation of fits, and geometrical tolerances using ANSI-Y14.5M, tolerances of form, orientation, and profile, including flatness, straightness, circularity, cylindricity, angularity, etc. Student work consists of designing and detailing various product drawings.

**MET 471. Nuclear Systems I. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MATH 211 and PHYS 111N. Reactor physics principles as applied to the design and operation of various types of commercial nuclear power reactors. Topics include sources of radiation and interaction with matter, neutron interactions, diffusion theory, and reactor kinetics.

**MET 472. Nuclear Systems II. 3 Credits.**

Complete study of the nuclear fuel cycle, from mining through fabrication, fuel management in an operating commercial power reactor, spent fuel management, and fuel reprocessing, with emphasis on chemical engineering considerations. Prerequisites: MET 471, CHEM 121N and CHEM 122N or equivalent.

**MET 475. Marine Engineering I. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: MET 330 and 350. This course includes: fundamental principles of naval architecture including nomenclature, geometry, stability, hydrostatics, structures, and motions; ship design processes; and a basic introduction to shipboard systems such as HVAC, refrigeration, power generation, propulsion, hydraulics, electronics, cargo handling systems, seawater systems, freshwater systems, and fuel, lube and other oil systems.

**MET 476. Marine Engineering II. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MET 475. This course builds upon MET 475 and provides a more in-depth look at shipboard systems and introduces topics such as basic shipboard operations and ship specifications.

**MET 480. High Performance Piston Engines. 3 Credits.**

Lecture 2 hours; laboratory 3 hours; 3 credits. Prerequisite: MET 300 or MAE 311. Corequisite: MET 350 or MAE 312. A study of the fundamental principles and performance characteristics of spark ignition and diesel internal combustion engines. Overview of engine types and their operation, engine design and operating parameters; ideal and semi-empirical models of engine cycles; combustion, fluid flow and thermal considerations in engine design and performance. Laboratory evaluation of engine performance using flow and dynamometer systems. (cross-listed with MAE 477/577).

**MET 485. Maintenance Engineering. 3 Credits.**

Prerequisites: EET 305 and MET 200. This course looks at maintenance systems: predictive, preventative and corrective; large scale maintenance systems, principles of reliability engineering, maritime logistics; planning for maintenance and repair, using and ordering spare parts, technical manuals, system specifications, and shipyard operations.

**MET 490. Lean Enterprise. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MET 200. The history of lean philosophy, founding principles, and the extension of these principles to above-shop-floor activities to create a lean enterprise. Topics include five s, value stream mapping, cellular manufacturing, pull system, performance metrics, point of use storage, built-in-quality, mistake proofing and lean implementation models. Research report on one of the lean principles is a course requirement.

**MET 495. Topics in Mechanical Engineering Technology. 1-3 Credits.**

Study of selected topics. Prerequisite: permission of the instructor.

**MET 496. Topics in Mechanical Engineering Technology. 1-3 Credits.**

Study of selected topics. Prerequisite: permission of the instructor.

## MGMT - Management

### MANAGEMENT Courses

**MGMT 325. Contemporary Organizations and Management. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: junior standing , and a declared major in the University or permission of the Dean's Office of the CBPA. The fundamentals of the managerial process (planning, organizing, leading and controlling) are considered in the context of 21st century organizations. Topics are almost evenly split between macro and micro perspectives.

**MGMT 340. Human Resources Management. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: junior standing , and a declared major in the University or permission of the Dean's Office of the CBPA. A study of the functional duties associated with personnel/human resource administration. Topics include human resource planning, selection, performance appraisal, training, discipline, wage and salary, occupational safety and health, equal employment opportunity, and labor relations.

**MGMT 350. Employee Relations Problems and Practices. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: junior standing, and a declared major in the University or permission of the Dean's Office of the CBPA. Examines personnel topics such as absenteeism, substance abuse, theft, gambling and counseling problem employees. Policies and practices used by organizations to anticipate and resolve these problems are explored and evaluated.

**MGMT 360. Labor Management Relations. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: MGMT 340, and a declared major in the University or permission of the Dean's Office of the CBPA. A contextual study of the trade union movement and its development, structure and processes. Emphasizes the impact of union organization on management practice and effectiveness in both private and public sector organizations.

**MGMT 361. International Business Operations. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: FIN 323, MKTG 311 and MGMT 325, and a declared major in the University or permission of the Dean's Office of the CBPA. An examination of the environment of multinational business, foreign trade, and the operation of multinational enterprises. Management, marketing, accounting, and financial problems unique to enterprises operating in varying economic, cultural, and political legal environments are investigated. This course includes a CAP experience. International business majors may not take MGMT 361 for credit. (qualifies as a CAP experience).

**MGMT 367. Cooperative Education. 1-3 Credits.**

1-3 credits (may be repeated for credit). Prerequisites: MGMT 325 and approval by the department and Career Management, in accordance with the policy for granting credit for cooperative education programs, and a declared major in the University or permission of the Dean's Office of the CBPA. Available for pass/fail grading only. Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place. (qualifies as a CAP experience).

**MGMT 368. Management Internship. 1-3 Credits.**

1-3 credits. Prerequisite: MGMT 325, and a declared major in the University or permission of the Dean's Office of the CBPA. Approval for enrollment and allowable credits is determined by the department and the Career Management Center in the semester prior to enrollment. Available for pass/fail grading only. (qualifies as a CAP experience).

**MGMT 369. Management Practicum. 1-3 Credits.**

1-3 credits. Prerequisite: MGMT 325, and a declared major in the University or permission of the Dean's Office of the CBPA; transfer students must have completed one semester at Old Dominion University. Approval for enrollment is determined by the Management CAP advisor and the Career Management Center in the semester prior to enrollment. Student will participate in a relevant work setting. (qualifies as a CAP experience).

**MGMT 413/513. Compensation Management. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: senior standing, MGMT 325 and MGMT 340 or MGMT 602, and a declared major in the University or permission of the Dean's Office of the CBPA. A study of wage theory, practice and problems. Topics include compensation theory, job analysis, job evaluation, wage surveys, incentive plans, benefit programs and special features of compensation for sales, managerial, professional, and public employees.

**MGMT 417/517. Employment Law. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: junior standing and MGMT 325 or 602, and a declared major in the University or permission of the Dean's Office of the CBPA. An analysis of how the federal and state governments may regulate the employer-employee relationship. Topics include labor relations law, equal employment opportunity law, other current statutory employment law and common law employment issues.

**MGMT 418. Advanced Human Resources Management: Contemporary Issues. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: junior standing and MGMT 325 and 340, and a declared major in the University or permission of the Dean's Office of the CBPA. An in-depth analysis of current issues and concerns within human resources management. The course will focus on specific issues and problems associated with the law and equal employment opportunity, employee selection, training and development, performance management/appraisal, and compensation. Methods of instruction include cases, exercises and PC applications.

**MGMT 426. Entrepreneurship: New Ventures Creation. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: MGMT 325, MKTG 311, and ACCT 201, and a declared major in the University or permission of the Dean's Office of the CBPA. A study of the essential elements leading to entrepreneurial and intrapreneurial success with emphasis on the creation, structure and management of new ventures. A recommended elective for business students.

**MGMT 427. Business and Society. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: MGMT 325, 3 hours of ACCT and 3 hours of ECON, and a declared major in the University or permission of the Dean's Office of the CBPA. An examination of the relationship between business (usually the individual firm, but occasionally a group of firms in an industry or a set of headline-makers in different industries) and society (an individual, group of people, the general public, or government entity representing the interests of this individual or group or the public). Emphasizes stakeholders and ethics. The course material is both philosophical and practical for executives and informative and practical for citizens.

**MGMT 451. Organizational Behavior. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: senior standing and MGMT 325, and a declared major in the University or permission of the Dean's Office of the CBPA. An interdisciplinary approach to the study of interpersonal relationships and problems encountered in managing employees. Topics include motivation, conflict, group behavior, and leadership.

**MGMT 452/552. Organization Development. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: MGMT 325 and 451 or 602, senior standing, and a declared major in the University or permission of the Dean's Office of the CBPA. Applications of organizational development theory and processes. Topics include OD Theory, role of change agent, intervention processes, the consulting process, and design and implementation of OD change programs.

**MGMT 462. Comparative International Management. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: senior standing and MGMT 325, and a declared major in the University or permission of the Dean's Office of the CBPA. The course examines organizational structure and functioning from cross-cultural and cross-national perspectives. Compares how management practices differ from one society to another. Comparisons are made between the U.S., Western Europe, Japan, the USSR, China, and the Third World nations.

**MGMT 463/563. Management Seminar Abroad. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: permission of the chief departmental advisor, and a declared major in the University or permission of the Dean's Office of the CBPA. A study tour abroad under the direction of a faculty member including on-site visits and management lectures designed to provide insight into differences in management practices in foreign countries. Offered summers only and when available.

**MGMT 485W. Business Policy and Strategy. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Corequisite: OPMT 303. Prerequisites: A grade of C or better in ENGL 211C or 221C or 231C; senior standing, FIN 323, MGMT 325, MKTG 311, and a declared major in the University or permission of the Dean's Office of the CBPA. Strategic management addresses the concerns of the high level executive or general manager, who must use a perspective that is qualitatively different from that of the lower-level functional manager or operations manager. Strategic decisions cut across functional lines. Whereas other courses focus on competency at a functional level (Are we doing things right?), this course deals with the overall effectiveness of the total organization (Are we doing the right things?). (This is a writing intensive course.)

**MGMT 495/595. Selected Topics in Management. 3 Credits.**

3 credits. Prerequisite: permission of the chief departmental advisor/graduate program director. Designed to provide advanced students in management an opportunity to study administration in highly specialized areas under the guidance of a faculty member.

**MGMT 497. Independent Study in Management. 3 Credits.**

3 credits. Prerequisite: permission of the chief departmental advisor, and a declared major in the University or permission of the Dean's Office of the CBPA. Designed to provide advanced students in management an opportunity for independent study of selected areas under the guidance of a faculty member.

## MIDE - Middle Eastern Studies

### MIDDLE EASTERN STUDIES Courses

**MIDE 300. Perspectives on the Middle East. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of instructor. This course explores the Middle East from interdisciplinary perspectives.

**MIDE 395. Topics in Middle Eastern Studies. 3 Credits.**

3 credits. Prerequisite: junior standing or permission of instructor. The advanced study of selected topics designed to permit small groups of qualified students to work on topics of mutual interest which, due to their specialized nature, may not be offered regularly.

**MIDE 405. Communication and Culture in the Middle East. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: three hours of lower level social science. The course examines the tensions between modernity and tradition in the context of Middle East culture. Cultural variables to be studied include myths, religion, family structures, and the use of science and technology.

**MIDE 495. Topics in Middle Eastern Studies. 3 Credits.**

3 credits. Prerequisite: junior standing or permission of instructor. The advanced study of selected topics designed to permit small groups of qualified students to work on topics of mutual interest which, due to their specialized nature, may not be offered regularly.

# MKTG - Marketing

## MARKETING Courses

**MKTG 311. Marketing Principles and Problems. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: junior standing, and a declared major in the University or permission of the Dean's Office of the CBPA. The design, distribution, pricing, and promotion of goods, services, people, places, and causes. Course examines both national and international markets and includes an introduction to the legal and ethical constraints on marketing.

**MKTG 367. Cooperative Education. 1-3 Credits.**

1-3 credits (may be repeated for credit). Prerequisites: C or better in MKTG 311 (or equivalent) and approval by the instructor and Career Management Center in accordance with the policy for granting credit for Cooperative Education programs. Available for pass/fail grading only. Student participation for credit based on the academic relevance of the work experience, criteria and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place. (qualifies as a CAP experience).

**MKTG 368. Marketing Internship. 3 Credits.**

3 credits. Prerequisites: C or better in MKTG 311 (or equivalent) and approval of instructor. Student completes a relevant marketing experience in the marketplace after submitting a job description, learning objectives, and task accomplishments. (qualifies as a CAP experience).

**MKTG 369. Practicum. 1-3 Credits.**

1-3 credits. Prerequisites: C or better in MKTG 311 (or equivalent) and approval of instructor. (qualifies as a CAP experience).

**MKTG 402. Consumer Behavior. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office of the CBPA. The effects of personality, motivation, perception, learning, attitudes, cultural and social influence and lifestyle on buying situations and how knowledge of these factors enables the marketer to better meet the needs of the marketplace.

**MKTG 403. Advertising Strategy. 3 Credits.**

Lecture, discussion, cases, individual and group projects 3 hours; 3 credits. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office of the CBPA. An examination of those advertising and promotional strategies directed toward the consumers of goods and services with emphasis on planning and executing an effective campaign to achieve meaningful goals.

**MKTG 404. Sales Management. 3 Credits.**

Lecture, discussion, individual and group projects 3 hours; 3 credits. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office of the CBPA. Material focuses on quantitative and qualitative goal setting; management, control and evaluation of the sales program; selecting, training, motivating, and evaluating the sales force.

**MKTG 406. Public Relations. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. For nonbusiness as well as business majors. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office of the CBPA. Development and application of a philosophy of business expressed in governmental, corporate, social or educational institutions in furthering their public image.

**MKTG 407. Marketing Research. 3 Credits.**

Lecture, discussion, and projects 3 hours; 3 credits. Prerequisites: BNAL 306 and MKTG 402, a grade of C or better in MKTG 311 and a declared major in the University or permission of the Dean's Office of the CBPA. Emphasis is given to the development of a strong theoretical base in the systematic selection, collection, and interpretation of marketing information leading to sound policies and strategies. Students are required to carry out a group project involving a marketing problem (or opportunity) for a company or involving a real market situation. The project will satisfy the practicum experience requirement of the College (CAP). (qualifies as a CAP experience).

**MKTG 411. Multi-National Marketing. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office of the CBPA. An examination of the operational and cross-cultural aspects of international marketing, including the nature of competition, developmental marketing structures and channels, price and credit policies, promotional methods, trade barriers, and international arrangements.

**MKTG 412. Retail Marketing. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office of the CBPA. This course will introduce students to a broad range of topics within the field of retailing: retailing strategy, targeting of customers, gathering of information, identifying and understanding customers, choosing a store location, managing a retail business, merchandise management and planning, and communication with the customer. The approach will combine both theory and practical application.

**MKTG 414. Ethics and Social Issues in Administration. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office of the CBPA. An examination of the ethical and social problems confronting administrators and personnel in dealing with discrimination in employment practices, credit and financing, advertising, warranties and guarantees, packaging and labeling, and environmental problems.

**MKTG 416. Professional Selling and Negotiations. 3 Credits.**

Lecture, discussion, and cases 3 hours; 3 credits. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office of the CBPA. Examines the role of the professional salesperson in a market-oriented organization. Presentation skills are studied in the context of interpersonal negotiations.

**MKTG 428. Marketing of Services. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office of the CBPA. This course examines the applications of the conceptual framework of marketing within the service business context. The course will focus on the characteristics of the service environment as well as important considerations in the service marketing mix.

**MKTG 450. Marketing on the Internet. 3 Credits.**

Lecture, discussion, and cases 3 hours; 3 credits. Prerequisite: C or better in MKTG 311 (or equivalent), and a declared major in the University or permission of the Dean's Office of the CBPA. This course examines the use of the Internet as a unique channel for marketing to consumers and businesses. It focuses on Internet marketing strategies, online strategic implementation, and the integration between companies' online and offline marketing efforts.

**MKTG 490. Marketing Policy and Strategy. 3 Credits.**

Lecture, discussion, and cases 3 hours; 3 credits. Prerequisites: marketing major, senior standing, MKTG 402, 407, plus two additional marketing courses or permission of instructor. A capstone course covering the marketing function and its relationship to the total business organization and its environment. Emphasis is placed upon the design of total marketing systems, strategies, and the design and production of new products and services.



**MKTG 496. Selected Topics in Marketing. 3 Credits.**

3 credits. Prerequisites: senior standing and permission of instructor. Designed to provide advanced students in marketing an opportunity to study, independently or in small groups, selected areas of marketing under the guidance of a faculty member.

## MSCM - Maritime and Supply Chain Management

### MARITIME AND SUPPLY CHAIN MANAGEMENT Courses

**MSCM 368. Maritime and Supply Chain Internship. 1-3 Credits.**

1-3 credits. Prerequisites: MSCM 370 and 441, and a declared major in the University or permission of the Dean's Office of the CBPA. Approval for enrollment and allowable credit is determined by the Decision Sciences CAP advisor and the Career Management Center in the semester prior to enrollment. (qualifies as a CAP experience).

**MSCM 370. International Shipping. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. The course examines international freight transportation and terms for movement of international trade. It discusses processes and concepts involved in international ocean and intermodal transportation. It shows how shipping companies enter into foreign markets and participate in international trade. It also covers operational issues such as payment, commercial documents, insurance; customs and clearance; shipping organizations and societies, and shipping law.

**MSCM 415. Maritime Security and Risk Analysis. 3 Credits.**

Lecture, 3 hours; 3 credits. Prerequisite: MSCM 370. An overview of international and U.S. initiatives to ensure the security of vessels, cargo, people, and infrastructure within the maritime domain. In addition to the impacts of regulatory requirements on maritime commerce, the course also addresses maritime threats to the international economy (including maritime piracy and maritime terrorism), maritime coalitions, and state-of-the-art techniques and tools for safeguarding ocean-borne commerce.

**MSCM 430/530. Strategic Sourcing and Purchasing Management. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: ACCT 202, BNAL 206, OPMT 303, and a declared major in the University or permission of the Dean's Office of the CBPA for 430 and ACCT 601 and OPMT 611 for 530. An overview of the strategic sourcing of materials and services in the organization and its role in the supply chain. Topics include sourcing decisions, price/cost analysis, quality issues, purchasing, supplier selection, legal and ethical issues, third party logistics, freight forwarding, and acquisition of services and capital assets.

**MSCM 439. Quality Management. 3 Credits.**

Lecture, 3 hours; 3 credits. Prerequisites: OPMT 303 and a declared major in the University or permission of the College of Business and Public Administration Dean's Office. This course examines the application of quality principles to the management of manufacturing and service organizations. Topics include fundamentals of quality management, Six Sigma, statistical process control, process capability and reliability.

**MSCM 441. Supply Chain Management and Logistics. 3 Credits.**

Supply chain management integrates all activities associated with the flow of materials and information from product start to customers. Examples include order processing, warehousing, inventory management, transportation and logistics, and the costs and information systems supporting these activities. Particular application is made to global logistics systems supporting port and maritime activities. Supply chain relationships can be improved through effective integration of management and via such technologies as the World Wide Web, electronic data exchange, and enterprise resource planning (ERP). (cross-listed with BNAL 441) Prerequisites: OPMT 303, and a declared major in the University or permission of the Dean's Office of the CBPA.

**MSCM 468/568. Distribution Center and Material Handling Management. 3 Credits.**

This course is designed to investigate the strategic role of distribution center and material management in the supply chain. Course content includes the analysis of distribution center operations through the study of design, system selection, and layout configuration as well as the evaluation of material handling and inventory management options. Co- or prerequisite: MSCM 441 or BNAL 441 or permission of the instructor.

**MSCM 471. Shipping Management. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MSCM 370, and a declared major in the University or permission of the Dean's Office of the CBPA. Examines the management of freight shipping organizations involved in the transport of cargo by ship. Key topics are managing ships and ship space; shipping markets, operations, costs, investment, insurance, claims, and regulation; and ship types, cargoes, safety, flagging, pollution, and chartering and purchase.

**MSCM 472. Port Management. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MSCM 370, and a declared major in the University or permission of the Dean's Office of the CBPA. Examines the management of seaports in the movement of cargo throughput. It presents concepts related to design, organization, administration, and operation of ports. It discusses issues involved in planning, investment, communication systems, congestion, pollution, safety, security; intermodal transportation; water and land accessibility; and port competition and cooperation to improve customer service.

**MSCM 473. Inland Waterway and Intermodal Transportation. 3 Credits.**

Lecture, 3 hours; 3 credits. Prerequisite: MSCM 370. This course is designed to explore and analyze the current condition of inland waterways both throughout the United States and around the globe with an emphasis on the creation of intermodal transportation networks. It will include an overview of existing infrastructure as well as financing mechanisms, national and international competitive strategies, risk management (public safety and emergency preparedness), and the environmental benefits as well as consider current legislation.

**MSCM 495/595. Topics in Maritime and Supply Chain Management. 3 Credits.**

3 credits. Prerequisite: permission of the instructor, and a declared major in the University or permission of the Dean's Office of the CBPA. A study of selected topics within Maritime and Supply Chain Management designed to provide an in-depth exploration of current issues.

**MSCM 497. Independent Study. 3 Credits.**

3 credits. Prerequisite: permission of the department, and a declared major in the University or permission of the Dean's Office of the CBPA. Affords students the opportunity to undertake independent study under the direction of a faculty member.

## MSIM - Modeling and Simulation

### MODELING AND SIMULATION Courses

**MSIM 111. Information Literacy and Research for Modeling and Simulation Engineers. 2 Credits.**

An introduction to methods and standards for locating and using information in the discipline of modeling and simulation engineering. Topics include: assessing information requirements; searching for, locating and evaluating information sources related to modeling and simulation; tools for managing, sharing, and presenting information; and ethical issues in the use of information. Students will complete exercises and research on topics involving information of interest to modeling and simulation engineers. Prerequisites: ENGN 110.

**MSIM 201. Introduction to Modeling and Simulation Engineering. 3 Credits.**

This is the first course for Modeling and Simulation Engineering (M&SE) students. M&SE discipline is surveyed at an overview level of detail. Topics include basic definitions, M&S paradigms and methodologies, applications, design processes, and human factors. Information literacy and research methods are addressed. Papers and oral presentations are required and allow the student to investigate different aspects of the discipline. The course provides a general conceptual framework for further M&SE studies. Pre- or corequisite: CS 150 and MATH 163.

**MSIM 205. Discrete Event Simulation. 3 Credits.**

An introduction to the fundamentals of modeling and simulating discrete-state, event-driven systems. Topics include basic simulation concepts and terms, queuing theory models for discrete event systems, structure of discrete event simulations, problem formulation and specification, input data representation, output data analysis, verification and validation, and the design of simulation experiments. Corequisite: MSIM 281. Prerequisites: MSIM 201. Pre- or corequisite: STAT 330.

**MSIM 281. Discrete Event Simulation Laboratory. 1 Credit.**

A laboratory course designed to provide a hands-on introduction to the development and application of discrete event simulation. Topics include an introduction to one or more discrete event simulation tools, common modeling constructs, data gathering and input data modeling, design of simulation experiments, output data analysis, and verification and validation. The design and implementation of a series of increasingly complex simulations of various discrete event systems are conducted. The laboratory is designed to accompany MSIM 205. Student written reports are required.

**MSIM 320. Continuous Simulation. 3 Credits.**

An introduction to the fundamentals of modeling and simulating continuous-state, time-driven systems. Topics include differential equation representation of systems, formulation of state variable equations, numerical integration, and techniques for numerical solution of differential equations including the Taylor algorithm and the methods of Runge-Kutta. Application domains considered include physical and biological systems. Corequisite: MSIM 382. Prerequisites: MATH 307 (or MATH 280) and MSIM 201. Pre- or corequisite: PHYS 227N or PHYS 232N.

**MSIM 331. Simulation Software Design. 3 Credits.**

Introduction to data structures, algorithms, programming methodologies, and software architectures in support of computer simulation. Topics include lists, queues, sets, trees, searching, sorting, reusable code, and order of complexity. Simulation structures developed include event lists, time management, and queuing models. Software models are implemented and tested. Corequisite: MSIM 383. Prerequisites: MSIM 205, CS 330 and CS 381.

**MSIM 367. Cooperative Education. 1-3 Credits.**

Student participation for credit based on the academic relevance of work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work is to take place. (Qualifies as a CAP experience) Prerequisites: approval by department and Career Management.

**MSIM 368. Internship. 1-3 Credits.**

Prerequisites: approval by department and Career Management. Academic requirements will be established by the department and will vary with the amount of credit desired. Allows students to gain short duration career-related experience. (Qualifies as a CAP experience).

**MSIM 369. Practicum. 1-3 Credits.**

Prerequisites: approval by the department and Career Management. Academic requirements will be established by the department and will vary with the amount of credit desired. Allows students to gain short duration career-related experience. (Qualifies as a CAP experience).

**MSIM 382. Continuous Simulation Laboratory. 1 Credit.**

A laboratory course designed to provide a hands-on introduction to the development and application of continuous simulation. Topics include an introduction to one or more continuous simulation tools, modeling of various physics-based systems, and numerical solution of differential equations. The design and implementation of a series of increasingly complex simulations of various continuous systems are conducted. Written communication skills are stressed; weekly writing assignments are required. The laboratory is designed to accompany MSIM 320. Student written reports are required.

**MSIM 383. Simulation Software Design Laboratory. 1 Credit.**

A laboratory course designed to provide a hands-on introduction to the development of simulation software. Topics include data structures, algorithms, and simulation executives. The students will conclude with the development of a basic simulation executive capable of managing discrete event simulations. Written communication skills are stressed; writing is required for each laboratory assignment. The laboratory is designed to accompany MSIM 331. Student written reports are required.

**MSIM 395. Topics in Modeling and Simulation Engineering. 1-3 Credits.**

Special topics of interest with emphasis placed on the recent developments in modeling and simulation engineering. Prerequisites: permission of the instructor.

**MSIM 396. Topics in Modeling and Simulation Engineering. 1-3 Credits.**

Special topics of interest with emphasis placed on the recent developments in modeling and simulation engineering. Prerequisites: permission of the instructor.

**MSIM 406/506. Introduction to Distributed Simulation. 3 Credits.**

An introduction to distributed simulation. Topics include motivation for using distributed simulation, distributed simulation architectures, time management issues, and distributed simulation approaches. Current standards for distributed simulation are presented. Prerequisites: MSIM 331.

**MSIM 408/508. Introduction to Game Development. 3 Credits.**

An introductory course focused on game development theory and modern practices with emphasis on educational game development. Topics include game architecture, computer graphics theory, user interaction, audio, high level shading language, animation, physics, and artificial intelligence. The developed games can run on a variety of computer, mobile, and gaming platforms. Prerequisites: CS 361 or MSIM 331.

**MSIM 410/510. Model Engineering. 3 Credits.**

The goal of this course is to develop understanding of the various modeling paradigms appropriate for capturing system behavior and conducting digital computer simulation of many types of systems. The techniques and concepts discussed typically include UML, concept graphs, Bayesian nets, Markov models, Petri nets, system dynamics, Bond graphs, etc. Students will report on a particular technique and team to implement a chosen system model. (cross-listed with ECE 410) Prerequisites: MSIM 205. Pre- or corequisite: MSIM 320.

**MSIM 441/541. Computer Graphics and Visualization. 3 Credits.**

The course provides a practical treatment of computer graphics and visualization with emphasis on modeling and simulation applications. It covers computer graphics fundamentals, visualization principles, and software architecture for visualization in modeling and simulation. Prerequisites: CS 250.

**MSIM 451/551. Analysis for Modeling and Simulation. 3 Credits.**

An introduction to analysis techniques appropriate to the conduct of modeling and simulation studies. Topics include input modeling, random number generation, output analysis, variance reduction techniques, and experimental design. In addition, techniques for verification & validation are introduced. Course concepts are applied to real systems and data. Prerequisites: MSIM 205 and STAT 330.

**MSIM 462/562. Introduction to Medical Image Analysis. 3 Credits.**

Introduction to basic concepts in medical image analysis. Medical image registration, segmentation, feature extraction, and classification are discussed. Basic psychophysics, fundamental ROC analysis and FROC methodologies are covered. Cross-listed with ECE 462/562.

**MSIM 463/563. Design and Modeling of Autonomous Robotic Systems. 3 Credits.**

Course focuses on autonomous robotics systems with emphasis on using modeling and simulation (M&S) for system level design and testing. Fundamental concepts associated with autonomous robotic systems are discussed. Course topics include: robotic control, architectures, and sensors as well as more advanced concepts such as error propagation, localization, mapping and autonomy. Design strategies that leverage M&S to accelerate the development and testing of sophisticated autonomous robotic algorithms for individual or teams of robots are covered. Pre- or corequisites: CS 150.

**MSIM 470/570. Foundations of Cyber Security. 3 Credits.**

Course provides an overview of theory, tools and practice of cyber security and information assurance through prevention, detection and modeling of cyber attacks and recovery from such attacks. Techniques for security modeling, attack modeling, risk analysis and cost-benefit analysis are described to manage the security of cyber systems. Fundamental principles of cyber security and their applications for protecting software and information assets of individual computers and large networked systems are explored. Anatomy of some sample attacks designed to compromise confidentiality, integrity and availability of cyber systems are discussed. Pre- or corequisites: MSIM 410 or permission of the instructor.

**MSIM 487W. Capstone Design I. 4 Credits.**

Part one of the senior capstone design experience for modeling and simulation engineering majors. Lectures focus on providing professional orientation and exploration of the M&S design process. Written communication, oral communication and information literacy skills are stressed. Individual and group design projects focus on the conduct of a complete M&S project. Industry-sponsored projects are an option. Individual and team reports and oral presentations are required. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; MSIM 410, MSIM 331, and MSIM 451.

**MSIM 488. Capstone Design II. 3 Credits.**

Part two of the senior capstone design experience for modeling and simulation engineering majors. Lectures focus on providing professional orientation and exploration of the M&S design process. Written communication, oral communication and information literacy skills are stressed. Individual and group design projects focus on the conduct of a complete M&S project. Industry-sponsored projects are an option. Individual and team reports and oral presentations are required. Prerequisites: MSIM 441 and MSIM 487W.

**MSIM 495/595. Topics in Modeling and Simulation Engineering. 1-3 Credits.**

Special topics of interest with emphasis placed on recent developments in modeling and simulation engineering. Prerequisites: permission of the instructor.

**MSIM 496/596. Topics in Modeling and Simulation Engineering. 1-3 Credits.**

Special topics of interest with emphasis placed on the recent developments in modeling and simulation engineering. Prerequisites: permission of the instructor.

**MSIM 497/597. Independent Study in Modeling and Simulation Engineering. 3 Credits.**

Individual analytical, computational, and/or experimental study in an area selected by the student. Supervised and approved by the advisor.

## **MSL - Military Science and Leadership**

### **MILITARY SCIENCE AND LEADERSHIP Courses**

**MSL 101+. Introduction to ROTC. 1 Credit.**

Lecture/Lab 3 hours; 1 credit. Learn fundamental concepts of leadership in a profession in both classroom and outdoor laboratory environments. Examines organization, customs and courtesies of the Army and ROTC with emphasis on career opportunities for ROTC graduates. Studies the military profession, lifestyle, and historical growth development of the Army. Increase self-confidence through team study and activities in basic drill, physical fitness, rappelling, leadership reaction course, first aid, making presentations and basic marksmanship. Participation in physical fitness program highly encouraged. Participation in one overnight adventure training exercise is highly encouraged.

**MSL 102+. Introduction to Leadership. 1 Credit.**

Lecture/Lab 3 hours; 1 credit. Prerequisite: MSL 101+ or 195, or departmental approval. Learn/apply principles of effective leadership. Reinforce self-confidence through participation in physically and mentally challenging exercises with upper-division ROTC students. Develop communication skills to improve individual performance and group interaction. Relate organizational ethical values to the effectiveness of a leader. Introduction to development of military tactical knowledge and technical skills. Students will gain a basic knowledge of land navigation, military geography and the use of maps and aerial photographs. Participation in physical fitness program highly encouraged. Participation in one overnight adventure training exercise is highly encouraged.

**MSL 195. Independent Study of Selected Military Topics. 1 Credit.**

Lecture 1 hour; 1 credit. Prerequisite: departmental approval. A study of selected topics within military science designed to accommodate special cadet's educational and commissioning requirements. Participation in physical fitness program highly encouraged. Participation in one overnight adventure training exercise is highly encouraged.

**MSL 196. Independent Study of Selected Military Topics. 1 Credit.**

Lecture 1 hour; 1 credit. Prerequisite: departmental approval. A study of selected topics within military science designed to accommodate special cadet's educational and commissioning requirements. Participation in physical fitness program highly encouraged. Participation in one overnight adventure training exercise is highly encouraged.

**MSL 201+. Leadership Skills II. 1 Credit.**

Lecture/Lab 3 hours; 1 credit. Prerequisite: MSL 101+/102+ or 195/196, or departmental approval. Course is designed to refine and continue to develop knowledge of basic military skills. Learn/apply ethics-based leadership skills that develop individual abilities and contribute to the building of effective teams of people. Develop skills in oral presentations, writing concisely, planning of events, coordination of group efforts, advanced first aid, land navigation and basic military tactics. Learn fundamentals of ROTC's Leadership Development Program. Participation in physical fitness program highly encouraged. Participation in one overnight adventure training exercise is highly encouraged.

**MSL 202+. Foundations of the Military Profession. 1 Credit.**

Lecture/Lab 3 hours; 1 credit. Prerequisite: MSL 201+ or 295, or departmental approval. Continued development of leadership ability through active participation as junior leaders at the small unit level. Students are given increased leadership opportunities, which sharpen interpersonal communication skills and expand capabilities for future advancement in a military career. Introduction to individual and team aspects of military tactics in small unit operations. Practical exercises with upper division ROTC students. Instruction will build on fundamentals of land navigation, individual soldier skill and rifle marksmanship. Participation in physical fitness program highly encouraged. Participation in one overnight adventure training exercise is highly encouraged.

**MSL 250+. Alternate Summer Training Program: Leaders Training Course (LTC). 6 Credits.**

6 credits. Prerequisite: departmental approval. Course consists of five weeks of intensive and challenging military training at Fort Knox, Kentucky. Permits students to satisfy all requirements for entry into Advanced Course. Students are paid approximately \$650 (food, lodging, transportation provided).

**MSL 251+. Optional Summer Training Program: Airborne School. 2 Credits.**

2 credits. Prerequisite: departmental approval. A three-week course conducted at Fort Benning, Georgia, which focuses on parachute operations, individual and group parachute jumps, equipment orientation, and physical training. Award of the Army Airborne Badge upon course completion. Travel, lodging and most meal costs are defrayed by the U.S. Army.

**MSL 252+. Optional Summer Training Program: Air Assault School. 2 Credits.**

2 credits. Prerequisite: departmental approval. A two-week course conducted at various locations. Training in the techniques, skills and procedures used in air assault operations, including basic and advanced rappelling, helicopter rappelling, troop leader procedures, pathfinder techniques, and rigging and slingloading skills. Award of the Army Assault Badge upon course completion. Travel, lodging and most meal costs are defrayed by the U.S. Army.

**MSL 295. Independent Study of Selected Military Topics. 1 Credit.**

Lecture/Lab 2 hours; 1 credit. Prerequisite: departmental approval. A study of selected topics within military science designed to accommodate special successful progression through military cadet educational and commissioning requirements. Participation in physical fitness program required. Participation in one overnight adventure training exercise is required.

**MSL 296. Independent Study of Selected Military Topics. 1 Credit.**

Lecture/Lab 2 hours; 1 credit. Prerequisite: departmental approval. A study of selected topics within military science designed to accommodate special successful progression through military cadet educational and commissioning requirements. Participation in physical fitness program required. Participation in one overnight adventure training exercise is required.

**MSL 301. Advanced Leadership Skills. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: MSL 201+/202+, or 295/296, or 250+ or departmental approval. Corequisite: MSL 311+. Course teaches decision making and problem solving skills. Students learn to plan, direct and coordinate individual and group efforts toward task accomplishment. Field exercises afford practical opportunities for the students to apply instruction. Cadets are evaluated against 16 leadership dimensions, including decisiveness, delegation, influence, problem analysis, planning, technical competence, and communication.

**MSL 302. Applied Leadership. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MSL 301 or 395. Corequisite: MSL 312+. Course presents increasingly intense and complex situations in which students apply military skills and leadership to solve tactical problems. Students develop leadership proficiencies in all basic military technical and tactical skills, including basic rifle marksmanship, day and night land navigation, physical training, and small/large unit tactics. Field training exercises afford opportunities to apply military leadership and management skills. Cadets are evaluated using 16 leadership dimensions.

**MSL 311+. Advanced Leadership Skills III Lab. 1 Credit.**

1 credit. Corequisite: MSL 301. Practical application of individual and leadership skills in simulated tactical environments of increasing complexity and intensity. Includes weekend training in basic rifle marksmanship, day and night land navigation, and small unit tactics. Affords students opportunities to apply leadership skills to plan, direct, and coordinate the activities of others to accomplish a mission. Mandatory physical fitness training 3 times a week to build stamina and physical condition to lead from the front. Participation in one overnight adventure training exercise per semester is required.

**MSL 312+. Applied Leadership Lab. 1 Credit.**

1 credit. Corequisite: MSL 302. Practical application of individual and leadership skills in simulated tactical environments of increasing complexity and intensity. Includes weekend training in basic rifle marksmanship, day and night land navigation, and small unit tactics. Affords students opportunities to apply leadership skills to plan, direct, and coordinate the activities of others to accomplish a mission. Mandatory physical fitness training 3 times a week to build stamina and physical condition to lead from the front. Participation in one overnight adventure training exercise per semester is required.

**MSL 315+. Summer Training Program - Leader Development and Assessment Course (LDAC). 6 Credits.**

6 credits. Prerequisites: MSL 301/302 or 395/396. A five-week summer camp conducted at Fort Lewis, Washington. The student will receive pay. Travel, lodging and most meal costs are defrayed by the U.S. Army. The camp environment is highly structured and demanding, stressing leadership and skills evaluations at the camp weigh heavily in the subsequent selection process that determines the type of commission and job opportunities given to the student upon graduation from ROTC and the University.

**MSL 317+. Cadet Troop Leadership Training. 3 Credits.**

3 credit hours. Prerequisite: departmental approval. A two to four week training program designed to introduce junior officers to responsibilities of commissioned lieutenants. Stateside or overseas programs are available. Travel, lodging and most meals are defrayed by the U.S. Army.

**MSL 395. Independent Study. 3 Credits.**

Lecture 3 hours; 3 credit hours. Prerequisite: departmental approval. A study of selected topics within military science designed to accommodate special cadet educational and commissioning requirements. Participation in a one-hour physical fitness session is mandatory.

**MSL 396. Independent Study. 3 Credits.**

Lecture 3 hours; 3 credit hours. Prerequisite: departmental approval. A study of selected topics within military science designed to accommodate special cadet educational and commissioning requirements. Participation in a one-hour physical fitness session is mandatory.

**MSL 401. Military Leadership and Management. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: MSL 301/302, 395/396, or departmental approval. Corequisite: MSL 411+. Class teaches the Army's training management system, leadership theories, staff planning and coordination, and counseling skills. Simultaneously, students in the course will assume leadership responsibilities in the ROTC battalion, affording practical opportunities to apply skills learned in the classroom. At the end of the semester, students will possess the fundamental skills, attributes, and abilities to operate as competent leaders in the cadet battalion and confidently shoulder the responsibilities entrusted to them.

**MSL 402. Officership. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MSL 401 or departmental approval. Corequisite: MSL 412+. Final preparation for commissioning as a Lieutenant. Course emphasizes effective communications skills gained through individual presentations and by leading and influencing groups within the Cadet Battalion. Students also examine topics in military law and explore practical and ethical challenges of military leadership as they relate to personnel management, logistics, training, and operations. Students are the primary instructors and leaders within the Cadet Battalion.

**MSL 411+. Senior Military Leadership and Management Laboratory. 1 Credit.**

1 credit. Corequisite: MSL 401. Practical application of individual and leadership skills in simulated tactical environments of increasing complexity and intensity. Includes weekend training in basic rifle marksmanship, day and night land navigation, and small unit tactics. Affords students opportunities to apply leadership skills to plan, direct, and coordinate the activities of others to accomplish a mission. Mandatory physical fitness training 3 times a week to build stamina and physical condition to lead from the front. Participation in one overnight adventure training exercise per semester is required.

**MSL 412+. Senior Leadership Laboratory. 1 Credit.**

1 credit. Corequisite: MSL 402. Practical application of individual and leadership skills in simulated tactical environments of increasing complexity and intensity. Includes weekend training in basic rifle marksmanship, day and night land navigation, and small unit tactics. Affords students opportunities to apply leadership skills to plan, direct, and coordinate the activities of others to accomplish a mission. Mandatory physical fitness training 3 times a week to build stamina and physical condition to lead from the front. Participation in one overnight adventure training exercise per semester is required.

**MSL 495. Independent Study. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: departmental approval. A study of selected topics within the military science program designed to accommodate special cadet education and commissioning requirements. Participation in a one-hour physical fitness session is mandatory.

**MSL 496. Independent Study. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: departmental approval. A study of selected topics within the military science program designed to accommodate special cadet education and commissioning requirements. Participation in a one-hour physical fitness session is mandatory.

## MUSA - Music, Applied

### MUSIC, APPLIED Courses

**MUSA 139. Half-Hour Lesson. 1 Credit.**

Applied lesson. Prerequisites: permission of the faculty.

**MUSA 140. Half-Hour Lesson. 1 Credit.**

Half-hour applied lesson. Prerequisites: permission of the faculty and MUSA 139.

**MUSA 141. Hour Lesson. 2 Credits.**

One hour applied lesson. Prerequisites: permission of faculty.

**MUSA 142. Hour Lesson. 2 Credits.**

One hour applied lesson. Prerequisites: permission of faculty.

**MUSA 151. One Hour Lesson. 3 Credits.**

One hour performance level applied lesson. Prerequisites: permission of faculty.

**MUSA 152. Hour Lesson. 3 Credits.**

One hour applied lesson performance level. Prerequisites: permission of faculty.

**MUSA 232. Hour Lesson - Applied Composition. 3 Credits.**

One hour lesson in composition. Prerequisites: MUSC 222.

**MUSA 239. Half-Hour Lesson. 1 Credit.**

One half-hour applied lesson. Prerequisites: MUSA 140 and permission of the faculty.

**MUSA 240. Half-Hour Lesson. 1 Credit.**

One half-hour applied lesson. Prerequisites: MUSA 239 and permission of the faculty.

**MUSA 241. Hour Lesson. 2 Credits.**

One hour applied lesson. Prerequisites: permission of faculty.

**MUSA 242. Hour Lesson. 2 Credits.**

One hour applied lesson. Prerequisites: permission of faculty.

**MUSA 251. Hour Lesson. 3 Credits.**

One hour performance level applied lesson. Prerequisites: permission of faculty.

**MUSA 252. Hour Lesson. 3 Credits.**

One hour performance level lesson Completion of this level requires a half hour public recital for instrumental area students. Prerequisites: permission of faculty.

**MUSA 331. Hour Lesson - Applied Composition. 3 Credits.**

One hour composition lesson. Original work in composition starting with the smaller forms in both the vocal and the instrumental fields. At least one 10-minute lecture-performance at Student Performance Hours or an equivalent thereof is required. Prerequisites: MUSA 232.

**MUSA 332. Hour Lesson - Applied Composition. 3 Credits.**

One hour composition lesson. Original work in composition starting with the smaller forms in both the vocal and the instrumental fields. At least one 10-minute lecture-performance at Student Performance Hours or an equivalent thereof is required. Prerequisites: MUSA 331.

**MUSA 339. Hour Lesson - Applied Composition. 2 Credits.**

Hour lesson in composition for minors and non-majors. Prerequisites: permission of instructor.

**MUSA 340. Hour Lesson - Applied Composition. 2 Credits.**

Hour lesson in composition for minors and non-majors. Prerequisites: MUSA 240 and permission of faculty.

**MUSA 341. Hour Lesson. 2 Credits.**

One hour lesson per week. Prerequisites: permission of faculty.

**MUSA 342. Hour Lesson. 2 Credits.**

One hour applied lesson. Prerequisites: permission of faculty.

**MUSA 351. Hour Lesson. 3 Credits.**

One hour performance level applied lesson. Successful completion of a half hour recital is also required for vocal students only. Prerequisites: permission of faculty.

**MUSA 352. Hour Lesson. 3 Credits.**

One hour performance level applied lesson. Prerequisites: permission of faculty.

**MUSA 431. Hour Lesson - Applied Composition. 3 Credits.**

One hour composition lesson. Original composition in larger forms. One or more lecture-performances at Student Performance Hours or equivalents thereof are required. Prerequisites: MUSA 332.

**MUSA 432. Hour Lesson - Applied Composition. 3 Credits.**

One hour composition lesson. Original composition in larger forms. Prerequisites: MUSA 431.

**MUSA 439. Hour Lesson - Applied Composition. 2 Credits.**

One hour composition lesson for minors and non-majors. Prerequisites: MUSA 340 and permission of faculty.

**MUSA 440. Hour Lesson - Applied Composition. 2 Credits.**

One hour composition lesson for minors and non-majors. Prerequisites: MUSA 439 and permission of faculty.

**MUSA 441. Hour Lesson. 2 Credits.**

One hour applied lesson. Satisfaction of a degree requirement on this level includes successful performance of a one-half hour private or, at faculty discretion, public recital. Prerequisites: permission of faculty.

**MUSA 442. Hour Lesson. 2 Credits.**

One hour applied lesson. Satisfaction of a degree requirement on this level includes successful performance of a one-half hour private or, at faculty discretion, public recital. Numbers may be repeated. Prerequisites: permission of faculty.

**MUSA 445. Advanced Electronic Composition I. 2 Credits.**

This course is designated only for music majors and/or minors. Music hardware and software to be studied includes, but is not limited to: K2500 Mackie 1604 VLZ 2 pro, Opcode MIDI 96 and Digital. Prerequisites: MUSC 335T and MUSC 336 or equivalent experience.

**MUSA 446. Advanced Electronic Composition II. 2 Credits.**

This course is designated for music majors and and/or minors. Music hardware and software to be studied includes, but is not limited to: K2500, Sound Designer, Oro Tools, and Finale. The participants are expected to compose a medium-length work (at least 4-5 minutes) using the above equipment. Grading is based on the knowledge of the electronic equipment and the quality of composing. Prerequisites: MUSA 445.

**MUSA 451. Hour Lesson. 3 Credits.**

One hour performance level lesson. Prerequisites: permission of faculty.

**MUSA 452. Hour Lesson. 3 Credits.**

One hour performance level lesson. Completion of this level includes successful performance of a one-hour public recital. Prerequisites: permission of faculty.

# MUSC - Music

## MUSIC Courses

### **MUSC 101. Beginning Piano Class. 1 Credit.**

Introduction, practical training, and development of basic piano skills, including the playing of scales, arpeggios, chords, and simple songs; sight reading, transposition, harmonization of melodies, and improvisation. (For music majors only) Prerequisites: permission of instructor.

### **MUSC 102. Beginning Piano Class. 1 Credit.**

Introduction, practical training, and development of basic piano skills, including the playing of scales, arpeggios, chords, and simple songs; sight reading, transposition, harmonization of melodies, and improvisation. (For music majors only) Prerequisites: MUSC 101 and permission of instructor.

### **MUSC 107. Beginning Voice Class. 1 Credit.**

Introduction, practical training, and development of basic singing skills.

### **MUSC 113. Music Industry: Live Audio Engineering. 3 Credits.**

This course covers fundamentals of live audio engineering, rudimentary acoustics, auditory perception and psychoacoustical concepts. Students will learn to assemble sound reinforcement systems for small and large ensembles and examine how sound is perceived by the human ear. Topics such as signal flow, cabling, mixing, busing and monitoring will be addressed.

### **MUSC 115. Introduction to Pro Tools. 3 Credits.**

This course is designed to introduce students to the most widely used digital audio workstation in the professional audio industry. Topics include basic of digital audio theory, system configuration, file structure and organization, recording and editing audio and MIDI data as well as post-production video. Prerequisites: MUSC 113.

### **MUSC 116. Essentials of Pro Tools. 3 Credits.**

Expanding of the skills learned in MUSC 115, this course focuses on the core concepts and skills required to successfully operate Pro Tools LE systems. Students will explore various I/O setups, controller options, session management techniques, recording and editing approaches as well as automation and mixing methods. Prerequisites: MUSC 115.

### **MUSC 121. Basic Musicianship. 3 Credits.**

Provides the knowledge of and skills in music theory fundamentals necessary for music majors, minors, and non majors to prepare for upper levels of music theory.

### **MUSC 126A. Honors: Music in History and Culture. 3 Credits.**

A survey of major composers and their works in the historical context of different style periods, including a discussion of the central philosophical and cultural issues of each period. Students will be required to attend at least three musical events and turn in written critiques. Prerequisites: honors college students only.

### **MUSC 215. ProTools Production. 3 Credits.**

This course concentrates on building the basic skills required to successfully operate ProTools HD systems in a professional environment. Students will explore various components of an HD system, session management techniques, selection and editing procedures as well as automation and mixing processes. Prerequisites: MUSC 116.

### **MUSC 216. Music Production Techniques. 3 Credits.**

This is the final course in a four-part sequence and prepares the student for Pro Tools Operator certification in music. Students will investigate various workflows, tracking and overdubbing techniques, virtual instruments, professional editing techniques as well as advanced automation and mixing processes. Prerequisites: MUSC 215.

### **MUSC 221. Music Theory. 3 Credits.**

Written and keyboard harmony and voice leading. An elementary course dealing with the fundamentals of pitch and time and the use of triads. Prerequisites: placement test or permission of the instructor.

### **MUSC 222. Music Theory. 3 Credits.**

Written and keyboard harmony. An elementary course dealing with the fundamentals of pitch and time and the use of triads. Prerequisites: MUSC 221, music major or permission of the instructor.

### **MUSC 223. Ear Training, Sight Singing and Dictation. 1 Credit.**

Melodic, rhythmic, and harmonic dictation; singing, recognition, and writing of various intervals and triads. Pre- or corequisite: MUSC 221 or permission of instructor.

### **MUSC 224. Ear Training, Sight Singing and Dictation. 1 Credit.**

Melodic, rhythmic, and harmonic dictation; singing, recognition, and writing of various intervals and triads. Prerequisites: MUSC 223 or permission of instructor.

### **MUSC 225. Live Audio Engineering. 3 Credits.**

This course covers fundamentals of live audio engineering, rudimentary acoustics, auditory perception and psychoacoustical concepts. Students will learn to assemble sound reinforcement systems for small and large ensembles and examine how sound is perceived by the human ear. Topics such as signal flow, cabling, mixing, busing and monitoring will be addressed.

### **MUSC 261. Music Literature Survey. 1 Credit.**

Required for music majors. Available to qualified nonmajors. A technical study of music from the Middle Ages through the twentieth century. Listening to recordings and attending live concerts are required.

### **MUSC 262. Music Literature Survey. 1 Credit.**

Required for music majors. Available to qualified nonmajors. A technical study of music from the Middle Ages through the twentieth century, as well as music from non-Western cultures. Listening to recordings and attending live concerts are required.

### **MUSC 264A. Music in History and Culture. 3 Credits.**

This course is designed to be an introduction to the appreciation and understanding of music through music listening activities and a survey of music history. Basic principles and elements of music are discussed in relation to contexts within a variety of musical styles including classical, jazz, popular, and world music. Regular and repeated listening is an important part of the course in addition to required concert attendance.

### **MUSC 269. Music Industry: Practicum. 1 Credit.**

Supervised co-curricular music industry activities. Students may receive one credit hour per semester. Prerequisites: MUSC 113.

### **MUSC 295. Topics. 1-3 Credits.**

Special topics.

### **MUSC 301. Music Education: High Brass Class. 1 Credit.**

Required of all instrumental music education students. Designed to develop basic skills of playing and teaching the trumpet and French horn. (offered Fall, odd years) Prerequisites: students must display the ability to read music; open to music education majors only; required of all instrumental music education students.

### **MUSC 302. Music Education: Low Brass Class. 1 Credit.**

Designed to develop basic skills of playing and teaching trombone, euphonium, and tuba. (offered spring, even years) Prerequisites: MUSC 301 or permission of the instructor; required of all instrumental music education students.

### **MUSC 303. Music Education: Clarinet Class. 1 Credit.**

Designed to develop basic skills of playing and teaching the clarinet, which serves as a foundation for the other woodwind instruments. (offered fall, even years). Prerequisites: Required of all instrumental music education students.

### **MUSC 304. Music Education: Woodwind Class. 1 Credit.**

Designed to develop basic skills of playing and teaching flute, oboe, bassoon, and saxophone. (offered spring, odd years) Prerequisites: Required of all instrumental music education students.

### **MUSC 305. Music Education: Upper Strings Class. 1 Credit.**

Prerequisites: Required of all instrumental music education students. Designed to develop basic skills of playing and teaching the violin and viola and to evaluate instructional materials used with these instruments. (offered fall, even years).

**MUSC 306. Music Education: Lower Strings Class. 1 Credit.**

The course is designed to develop basic skills of playing and teaching cello and string bass and to evaluate instructional materials used with these instruments. Introduces heterogeneous teaching and rehearsal techniques using all four stringed instruments. (offered spring, odd years) Prerequisites: MUSC 305; required of all instrumental music education students.

**MUSC 307. Music Education: Percussion Class. 1 Credit.**

Class lessons on all percussion instruments and the study of teaching methods for these instruments. (offered fall, odd years) Prerequisites: Required of all instrumental music education students.

**MUSC 308. Music Education: Music for the Elementary Classroom Teacher. 3 Credits.**

Students gain skills and experience related to the use of music in elementary school. Prerequisites: junior standing.

**MUSC 309. Principles of Conducting. 1 Credit.**

The development of basic skills and techniques necessary for conducting choral and instrumental ensembles. Prerequisites: MUSC 224, MUSC 322, or permission of the instructor.

**MUSC 316. Popular Songwriting Techniques. 3 Credits.**

This course focuses on the craft of songwriting. Covering contemporary song forms, techniques of lyric and melody writing as well as popular harmony and analysis, the course prepares students to write hit songs. Students will learn how to effectively demo their own songs, successfully collaborate, write jingles and copyright their own material. Prerequisites: MUSC 222.

**MUSC 321. Advanced Theory. 2 Credits.**

A continuation of MUSC 222; written and keyboard work introducing modulation, seventh chords, and chromatic harmony. Prerequisites: MUSC 222, placement test, or permission of the instructor.

**MUSC 322. Advanced Theory. 2 Credits.**

A continuation of MUSC 321; written and keyboard work introducing advanced modulation, extended chordal structures, advanced chromatic harmony, a basic look at compositional techniques and form and analysis, and selected 20th century techniques. Prerequisites: MUSC 321 or placement test.

**MUSC 323. Advanced Ear Training, Sight Singing and Dictation. 1 Credit.**

A continuation of MUSC 224: written and keyboard work introducing modulation, seventh chords and chromatic harmony. Prerequisites: MUSC 224 or permission of instructor. Pre- or corequisite: MUSC 321.

**MUSC 324. Advanced Ear Training, Sight Singing and Dictation. 1 Credit.**

A continuation of MUSC 323; written and keyboard work introducing modulation, seventh chords and chromatic harmony. Prerequisites: MUSC 323 or permission of the instructor. Pre- or corequisite: MUSC 322.

**MUSC 333. Music Business. 3 Credits.**

An overview of the professional structure, standards, and practices of the music entertainment industry and its application to record product and individual career development. Prerequisites: MUSC 269 and junior standing, or permission of the instructor.

**MUSC 335T. Music Production: MIDI I. 3 Credits.**

This course will introduce students to MIDI technology with an emphasis on sequencing and editing techniques and music notation skills. Prerequisites: music major, IDS major, or permission of instructor.

**MUSC 336. Electronic Music. 3 Credits.**

This introductory course is designed to give students a historical overview of mechanical and electronic music through topical study and listening examples. Additionally, students will create their own electronic music compositions using analog, digital and virtual hardware/software. Prerequisites: music major, IDS major, or permission of instructor.

**MUSC 337. Jazz Improvisation I. 2 Credits.**

This course will introduce students to the basic concepts of Jazz improvisation, including harmonic and melodic implications. Prerequisites: MUSC 221 or permission of the instructor.

**MUSC 338. Jazz Improvisation II. 2 Credits.**

This course is a continuation of MUSC 337, and will delve further into more advanced techniques used in Jazz improvisation. Prerequisites: MUSC 337 or permission of the instructor.

**MUSC 345. Diction for Singers. 1 Credit.**

An introductory course dealing with correct principles of effective diction essential to the singing of English and Italian songs. (offered every fall) Prerequisite: vocal music major or permission of the instructor.

**MUSC 346. Diction for Singers. 1 Credit.**

An introductory course dealing with correct principles of effective diction essential to the singing of German and French songs. (offered every spring) Prerequisite: MUSC 345.

**MUSC 350. Music Notation. 3 Credits.**

This course is designed to introduce students to the art of music notation through exploring the history of music engraving practices, hands-on experience writing music manuscript (hand-written) and the use of modern notation software (Finale, Sibelius, etc.) with MIDI implementation. Prerequisite: MUSC 221.

**MUSC 361. History of Music. 3 Credits.**

A general survey of the growth of music showing the influence of historical events upon musical developments. Prerequisites: MUSC 264A, or MUSC 261 and MUSC 262, and MUSC 222, or permission of instructor.

**MUSC 362W. History of Music. 3 Credits.**

A general survey of the growth of music showing the influence of historical events upon musical development. (This is a writing intensive course.) Prerequisites: grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; MUSC 261 and MUSC 262 or MUSC 264A or MUSC 126A, and MUSC 222 or permission of instructor.

**MUSC 368. Music Industry Internship. 3 Credits.**

An opportunity to integrate service and applied learning experience with music industry perspectives. Prerequisites: MUSC 269.

**MUSC 370. Jazz Combo. 1 Credit.**

This ensemble will explore Jazz literature, focusing primarily on the small group format. Previous experience with improvisation is necessary for all participants. Prerequisites: permission of the instructor.

**MUSC 371+. Ensemble. 1 Credit.**

Three rehearsal periods per week. Prerequisites: by audition only, or permission of instructor; must have a significant background in performing.

**MUSC 372+. Ensemble. 1 Credit.**

Three rehearsal periods per week. Prerequisites: by audition only, or permission of instructor; must have a significant background in performing.

**MUSC 377. Extracurricular Studies. 1-6 Credits.**

Extracurricular activities may be approved for credit based on objectives, criteria, and evaluative procedures as formally determined by the department and the student prior to the semester in which the activity is to take place. Credit is subject to review by the provost. Prerequisites: approval by the department and the dean, in accordance with the policy on granting credit for extracurricular activities.

**MUSC 378. Extracurricular Studies. 1-6 Credits.**

Extracurricular activities may be approved for credit based on objectives, criteria, and evaluative procedures as formally determined by the department and the student prior to the semester in which the activity is to take place. Credit is subject to review by the provost. Prerequisites: approval by the department and the dean, in accordance with the policy on granting credit for extracurricular activities.

**MUSC 380. Symphony Band. 1 Credit.**

Open to all university students. Symphony band is a large ensemble for woodwind, brass and percussion players. Students will participate in rehearsals and concerts. Prerequisites: Students must successfully perform on a standard concert band instrument or concert percussion, be able to read music, and permission of the instructor.

**MUSC 381+. Concert Choir. 1 Credit.**

Participation in rehearsals and public performances of the Concert Choir. Prerequisites: ability to read music; audition required.

**MUSC 382+. Wind Ensemble. 1 Credit.**

3 rehearsal periods per week. Participation in rehearsals and public performances of the band. Prerequisite: ability to read music and/or permission of the instructor.

**MUSC 383+. Symphony Orchestra. 1 Credit.**

Rehearsals 3 days per week and dress rehearsals TBA. Participation in rehearsals and public performances of the University Symphony Orchestra. Prerequisite: by audition or permission of the instructor.

**MUSC 384+. Jazz Ensemble. 1 Credit.**

This instrumental group will explore and perform standard jazz literature for the Big Band. Prerequisites: ability to read music and permission of the instructor.

**MUSC 385+. Basketball Band. 1 Credit.**

Basketball band performs at all home Men's and Women's basketball games and selected tournament performances. Prerequisites: ability to read music and/or permission of the instructor.

**MUSC 386+. New Dominions. 1 Credit.**

Vocal jazz ensemble, performing standard jazz choir literature. Prerequisites: ability to read music and permission of the instructor.

**MUSC 387+. Collegium Musicum. 1 Credit.**

Early music instrumental ensemble. Prerequisites: permission of the instructor.

**MUSC 388+. Madrigal Singers. 1 Credit.**

Small vocal ensemble focusing on a cappella classical music. Prerequisites: permission of the instructor.

**MUSC 389+. Brass Choir. 1 Credit.**

Brass Ensemble consisting of trumpets, horns, trombones, euphoniums, and tubas. Performing works written for brass as well as arrangements of choral, orchestral, jazz, pop, and show music. Prerequisites: ability to read music and/or permission of the instructor; audition required.

**MUSC 390. Marching Band. 1 Credit.**

Marching band will meet only during the fall semester and perform at all home and some away football games and other selected events. Students will participate in rehearsals and performances. Prerequisites: Successful playing audition, the ability to read music and permission of the instructor; students accepted to participate must attend summer training camp prior to classes beginning in the fall.

**MUSC 395. Topics in Music. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for credit within a major. These courses will appear in the course schedule. Course descriptions and prerequisites for each course may be found in information distributed to all academic advisors. Prerequisites: junior standing or permission of the instructor.

**MUSC 396. Topics in Music. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for credit within a major. These courses will appear in the course schedule. Course descriptions and prerequisites for each course may be found in information distributed to all academic advisors. Prerequisites: junior standing or permission of the instructor.

**MUSC 397. Tutorial Work in Special Topics in Music. 1-3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: junior standing and approval of the department chair.

**MUSC 398. Tutorial Work in Special Topics in Music. 1-3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: junior standing and approval of the department chair.

**MUSC 401. Music Education: Elementary Vocal and General Methods. 2 Credits.**

Required prior to student teaching for all students in music education. Focuses on materials and methods of vocal and general instruction for elementary music classrooms. (offered fall semesters) Prerequisites: TLED 301 or TLED 290. Pre- or corequisite: MUSC 402.

**MUSC 402. Music Education: Practicum (Elementary Vocal and General). 1 Credit.**

Required prior to student teaching for all students in music education. Enables students to observe master classroom teachers and to test accumulated teaching practices in elementary school vocal and general classroom settings. 20 hours of music classroom observation required (offered fall semesters) (qualifies as a CAP experience) Prerequisites: TLED 301 or TLED 290; admission into Teacher Preparation program required. Pre- or corequisite: MUSC 401.

**MUSC 403. Music Education: Secondary Vocal Methods. 2 Credits.**

Required prior to student teaching for all students in music education with voice, keyboard or guitar concentration. Focuses on methods of vocal instruction, materials and rehearsal methods for secondary vocal classroom settings. (offered spring semesters) Prerequisites: TLED 301 or TLED 290. Pre- or corequisite: MUSC 404.

**MUSC 404. Music Education: Practicum (Secondary Vocal). 1 Credit.**

Required prior to student teaching for all students in music education with voice, keyboard or guitar concentration. Enables students to observe master teachers and to test accumulated teaching practices in secondary school vocal classroom settings. 20 hours of observation required. Passing score of 160 on the Praxis II Music Content Knowledge Examination and passing scores on the VCLA are requirements of this course. (offered spring semesters) (qualifies as a CAP experience) Prerequisites: TLED 301 or TLED 290; admission into Teacher Preparation program required. Pre- or corequisite: MUSC 403.

**MUSC 407. Music Education: Secondary Instrumental Methods. 2 Credits.**

Required prior to student teaching for all students in music education with instrumental music concentration. Focuses on methods of instruction, materials and rehearsal methods for secondary instrumental classrooms. (offered spring semesters) Prerequisites: TLED 301 or TLED 290. Pre- or corequisite: MUSC 408.

**MUSC 408. Music Education: Practicum (Secondary Instrumental). 1 Credit.**

Required prior to student teaching for all students in music education with instrumental music concentration. Enables students to observe master teachers and to test accumulated teaching practices in secondary school instrumental classrooms. Passing score of 160 on the Praxis II Music Content Knowledge Examination and passing scores on the VCLA are requirements of this course. (offered spring semesters) (qualifies as a CAP experience) Prerequisites: TLED 301 or TLED 290; admission into Teacher Preparation program required. Pre- or corequisite: MUSC 407.

**MUSC 409. Music Education: Instrumental Techniques. 1 Credit.**

Required prior to student teaching for all students in music education with vocal, keyboard and guitar concentration. Focuses on development of vocal majors' ability to read instrumental scores; provides vocal majors an understanding of families of instruments. Prerequisites: ability to read music or permission of the instructor.

**MUSC 410/510. Psychology of Music. 3 Credits.**

This course is designed to assist students in enhancing their understanding of the aesthetic response to music in various settings. Students will learn to integrate their understanding of musical aptitude as it relates to human growth and development. In addition, students will study the psychological implication of personality types as they develop, implement, and assess their pedagogical approach. Prerequisites: junior standing or permission of instructor.

**MUSC 413. Advanced Choral Conducting. 2 Credits.**

Course deals with the analysis, interpretation, and conducting of varied choral literature. Prerequisites: MUSC 309.

**MUSC 414. Advanced Instrumental Conducting. 2 Credits.**

Course deals with the analysis, interpretation, and conducting of varied instrumental literature. Prerequisites: MUSC 309.

**MUSC 421. Counterpoint. 2 Credits.**

A study of the contrapuntal techniques of sixteenth century composers and their influence upon composers of the eighteenth through twentieth centuries. (offered fall, even years) Prerequisites: MUSC 221.



**MUSC 422/522. Form and Analysis. 2 Credits.**

Aural analysis study and analysis of the principal traditional musical forms. Stylistic and harmonic analysis as it related to score study will be discussed. (offered spring, even years) Prerequisites: MUSC 322 and MUSC 324 or permission of the instructor.

**MUSC 424. Orchestration. 2 Credits.**

A study of the range, musical functions, and technical characteristics of the instruments and their color possibilities in various combinations. Practical experience in scoring for small and large ensembles. (offered fall, odd years) Prerequisites: MUSC 321.

**MUSC 425. Vocal Arranging. 2 Credits.**

This course covers basic arranging techniques for traditional vocal ensembles. Students will develop the ability to reshape pre-existing melodies and chord progressions into successful arrangements for various groups. Prerequisites: MUSC 222.

**MUSC 426. Marching Band Techniques and Arranging. 2 Credits.**

Students will learn how to chart and arrange music for the marching band. In addition, basic vocal arranging techniques will be discussed. Students will be required to observe different styles of school marching bands. Prerequisites: MUSC 335T or permission of the instructor.

**MUSC 435. Music Production: MIDI II. 3 Credits.**

This course builds upon the fundamentals experienced in the introductory MIDI course. Topics include: advanced sequencing techniques, looping, editing, data manipulation, patch and control changes through real-time recording, patch editing, storage and retrieval, incorporation of external hardware, sampling, and an introduction to the incorporation of digital audio. Prerequisites: MUSC 335T.

**MUSC 436. Computers and Music. 3 Credits.**

This course is designed to give students a historical overview of computer music through topical study and listening examples. Additionally, students will create their own music compositions by using software to program, assist, enhance, manipulate and even compose the music. Prerequisites: MUSC 336.

**MUSC 445/545. Applied Music Pedagogy. 1 Credit.**

Teaching techniques, literature in the performing area. Seminar deals with resource materials. Laboratory: observation and teaching under supervision. Prerequisites: music major senior standing or permission of the department.

**MUSC 446. Applied Music Literature. 1 Credit.**

One hour seminar; 1 hour laboratory; 1 credit each semester. Prerequisite: music major senior standing or permission of the department. Teaching techniques, literature in the performing area. Seminar deals with resource materials. Laboratory: observation and teaching under supervision.

**MUSC 460/560. History of Jazz. 3 Credits.**

This course will study the historical development of jazz as an American art form. The emotion and meaning of this style will be investigated as well as the historical and contemporary aesthetic response. Emphasis will include the defining role of African American artists. The influence of jazz on the development of contemporary American music will be discussed. Written critiques of live performances will be required. Prerequisites: junior standing or permission of the instructor.

**MUSC 466/566. Modern Music. 3 Credits.**

A study of the techniques and styles in music in the twentieth and twenty-first century. (offered fall, even years) Prerequisites: MUSC 222, MUSC 361, and MUSC 362W, or permission of the instructor.

**MUSC 491/591. Music in the Baroque Era. 3 Credits.**

A study of music history from monody through the works of Bach and Handel. A discussion of musical style within the context of cultural history. (offered spring semesters, odd years) Prerequisites: MUSC 221, MUSC 222, MUSC 361 and MUSC 362W, or permission of instructor.

**MUSC 492/592. Music in the Classical Era. 3 Credits.**

A study of music history from the Rococo Period through the works of Haydn, Mozart and Beethoven. A discussion of musical style within the context of cultural history. (offered fall semesters, odd years) Prerequisites: MUSC 221, MUSC 222, MUSC 361 and MUSC 362W, or permission of instructor.

**MUSC 494/594. Music in the Romantic Era. 3 Credits.**

A study of music history from the late works of Beethoven to Mahler and Strauss. A discussion of musical style within the context of cultural history. (spring semesters, even years) Prerequisites: MUSC 221, MUSC 222, MUSC 361, and MUSC 362W, or permission of instructor.

**MUSC 495/595. Topics in Music. 1-3 Credits.**

These courses will appear in the course schedule. Course descriptions and prerequisites for each course may be found in information distributed to all academic advisors. Prerequisites: junior standing or permission of the instructor.

**MUSC 496/596. Topics in Music. 1-3 Credits.**

These courses will appear in the course schedule. Course descriptions and prerequisites for each course may be found in information distributed to all academic advisors. Prerequisites: junior standing or permission of the instructor.

**MUSC 497. Tutorial Work in Special Topics in Music. 1-3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: senior standing and approval of the department chair.

**MUSC 498. Tutorial Work in Special Topics in Music. 1-3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: senior standing and approval of the department chair.

## NAVS - Naval Science

### NAVAL SCIENCE Courses

**NAVS 101. Introduction to Naval Science. 2 Credits.**

Lecture 2 hours; 2 credits. General introduction to the naval service. Particular emphasis placed on the mission, organization, regulations and broad warfare components of the Navy and Marine Corps. Includes customs, discipline, courtesies, leadership, core values and shipboard nomenclatures.

**NAVS 111+. Naval Laboratory I. 1 Credit.**

On-campus laboratory 2 hours; 1 credit. Prerequisite: departmental permission. Covers basic military formations, drill movements, commands, customs, courtesies, honors and inspection. Lecture and discussion topics include security, equal opportunity and military justice. First year Naval Science students only.

**NAVS 112+. Naval Laboratory I. 1 Credit.**

On-campus laboratory 2 hours; 1 credit. Prerequisite: departmental permission. Continues basic military formations, drill movements, commands, customs, courtesies, honors and inspections. Lecture and discussion topics include cruise preparation, safety education, administration, security, equal opportunity and military justice. First year Naval Science students only.

**NAVS 201. Naval Ships Systems I. 3 Credits.**

Lecture 3 hours; 3 credits. Familiarizes students with types, structure and purpose of naval engineering systems, propulsion systems, auxiliary power systems, electrical systems and ship control. Ship design and stability characteristics are examined.

**NAVS 202. Naval Ships Systems II. 3 Credits.**

Lecture 3 hours; 3 credits. Introduction to theory and principles of operation of naval weapons systems. Covers types of weapons and fire control systems, capabilities/limitations, theory of target acquisition, identification and tracking, trajectory principles and basics of naval ordnance.

**NAVS 211+. Naval Laboratory II. 1 Credit.**

On-campus laboratory 2 hours; 1 credit. Prerequisite: departmental permission. Covers military formations, drill movements, commands, customs, courtesies, honors and inspections. Lecture/discussion topics include cruise preparation/evaluation, security, administration and military justice. Second year Naval Science students only.

**NAVS 212+. Naval Laboratory II. 1 Credit.**

On-campus laboratory 2 hours; 1 credit. Prerequisite: departmental permission. Military formations, drill movements, commands, customs, courtesies, honors and inspections. Lecture and discussion topics include cruise preparation and evaluation, safety, administration, security, equal opportunity and military justice. Second year Naval Science students only.

**NAVS 301. Navigation and Naval Operations I. 3 Credits.**

Lecture 3 hours; 3 credits. In-depth study of piloting including theory, principles and procedures. Includes use of charts, visual and electronic aids, and theory and operation of compasses. Other topics include tides, currents, effects of wind and weather, and nautical rules of the road.

**NAVS 302. Navigation and Naval Operations II. 3 Credits.**

Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: departmental permission. Relative motion vector-analysis theory, relative motion problems, formation tactics, and ship employment. Also includes an introduction to naval operations and operations analysis, ship behavior and characteristics in maneuvering, applied aspects of ship handling, and afloat communications. Concepts in naval leadership and naval operations reinforced through case studies.

**NAVS 310. Evolution of Warfare. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: departmental permission. Explores the basic concepts for understanding the operational art of warfare from the beginning of recorded history to the present.

**NAVS 311+. Naval Laboratory III. 1 Credit.**

On-campus laboratory 2 hours; 1 credit. Prerequisite: departmental permission. Military formations, drill movements, commands, customs, courtesies, honors and inspections. Lecture/discussion topics include cruise preparation and evaluation, security and military justice. Third year Naval Science students only.

**NAVS 312+. Naval Laboratory III. 1 Credit.**

On-campus laboratory 2 hours; 1 credit. Prerequisite: departmental permission. Military formations, drill movements, commands, customs, courtesies, honors and inspections. Lecture and discussion topics include cruise preparation and evaluation, safety, administration, security, equal opportunity and military justice. Third year Naval Science students only.

**NAVS 320. Naval Sea Power. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: NAVS 101 or department approval. The study of the evolution of the major world naval and maritime nations. The role of American naval and maritime affairs in the rivalries of the great world powers during the colonial period, the spread of revolutionary movements, and the era of civil and international conflicts in the 19th and 20th centuries.

**NAVS 395. Topics. 3 Credits.**

Study of selected topics. Prerequisite: departmental permission.

**NAVS 401. Leadership and Management I. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisite: NROTC Junior or Senior Midshipman or STA-21/MECEP; Non-NOTC student; departmental permission. The fundamentals of the managerial process (planning, organization, directing, and controlling) are considered in their relationship to the effectiveness of naval organization and readiness. Coverage includes human resources management, naval personnel management, material management and administration of division discipline.

**NAVS 402. Leadership and Ethics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: completion of all previous NAVS courses. Capstone course, designed to equip the student with the critical thinking skills to address moral and ethical dilemmas frequently faced by naval officers.

**NAVS 410. Amphibious Warfare. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: departmental permission. Historical survey of the projection of sea power with the emphasis on the evolution of the amphibious warfare in the 20th century. Defines the concept of amphibious warfare, explores its doctrinal origins and traces its evolution as an element of naval policy.

**NAVS 411+. Naval Laboratory IV. 1 Credit.**

On-campus laboratory 2 hours; 1 credit. Prerequisite: departmental permission. Covers military formations, drills, commands, customs, courtesies, honors and inspections. Lecture/discussion topics include precommissioning preparation, administration, equal opportunity, safety and military justice. Fourth year Naval Science students only.

**NAVS 412+. Naval Laboratory IV. 1 Credit.**

On-campus laboratory 2 hours; 1 credit. Prerequisite: departmental permission. Military formations, drill movements, commands, customs, courtesies, honors and inspections. Lecture and discussion topics include precommissioning preparation, safety, administration, security, equal opportunity and military justice. Fourth year Naval Science students only.

## NMED - Nuclear Medicine Technology

### NUCLEAR MEDICINE TECHNOLOGY Courses

**NMED 300. Medical Terminology. 3 Credits.**

A course designed to cover the terminology and abbreviations used in the clinical sciences. Prerequisites: ENGL 110C or equivalent.

**NMED 331. Fundamental Concepts in Nuclear Medicine Technology. 4 Credits.**

A course designed to cover the physical principles related to nuclear medicine technology. The methods and mathematics of radioactive decay, types of radiation, radiation interactions, origins of radionuclides, including SPECT and PET/CT radionuclides also presented. Prerequisites: PHYS 101N and PHYS 102N or equivalent.

**NMED 332. Nuclear Instrumentation. 4 Credits.**

This course is designed to familiarize the student with the theory, operation and quality assurance associated with the instrumentation found in a typical nuclear medicine department. Prerequisites: NMED 331 or permission of program director.

**NMED 335. Radiation Health. 3 Credits.**

Discussions of radiation effects on cellular systems as well as guidelines for radiation protection and safe handling of radioactive materials in the nuclear medicine clinical setting. Prerequisites: NMED 331 or permission of the instructor.

**NMED 401. Nuclear Medicine Technology I. 4 Credits.**

A course designed to cover the nuclear medicine procedures and protocols of the gastrointestinal, genitourinary, central nervous, skeletal systems. Other current or emerging clinical nuclear medicine procedures are also covered. Prerequisites: BIOL 250-BIOL 251 or permission of the program director.

**NMED 402. Nuclear Medicine Technology II. 4 Credits.**

A course designed to cover the nuclear medicine procedures of the respiratory, cardiovascular and endocrine systems. Other current and emerging clinical nuclear medicine procedures and protocols are also presented. Prerequisites: NMED 401 or permission of the program director.

**NMED 403. Radiopharmacy. 3 Credits.**

This course is designed to cover the concepts and techniques related to the field of radiopharmacy for nuclear medicine technology practice. The production, preparation, uses and quality assurance of radiopharmaceuticals are presented. Prerequisites: NMED 331, CHEM 105N-CHEM 106N and CHEM 107N-CHEM 108N or equivalent and permission of the program director.

**NMED 410. Nuclear Medicine and Molecular Imaging. 3 Credits.**

This course covers the concepts, instrumentation and procedures pertaining to molecular imaging as related to nuclear medicine. Topics include: Positron Emission Tomography (PET), Computed Tomography (CT), PET/CT, Magnetic Resonance Imaging (MRI), and other emerging technologies. Cross-sectional anatomy and radionuclide therapy, including monoclonal antibodies are also discussed. Prerequisites: NMED 401 and NMED 402.

**NMED 440. Clinical Nuclear Medicine Technology I. 8 Credits.**

Clinical instruction in patient care, radiation safety, radiopharmaceutical administration, imaging and nonimaging techniques and quality assurance procedures. (qualifies as a CAP experience) Prerequisites: NMED 401, NMED 402 and permission of the program director.

**NMED 450. Clinical Nuclear Medicine Technology II. 8 Credits.**

Continued clinical instruction in diagnostic and therapeutic nuclear medicine procedures, including PET/CT. The correlation of nuclear medicine procedures is also presented. (qualifies as a CAP experience) Prerequisites: NMED 440 and permission of the program director.

**NMED 460. Clinical Nuclear Medicine Technology III. 8 Credits.**

Advanced clinical instruction in diagnostic and therapeutic nuclear medicine procedures, including PET/CT. The correlation of nuclear medicine procedures is also presented. (qualifies as a CAP experience) Prerequisites: NMED 450 and permission of the program director.

**NMED 475W. Administration and Management in Nuclear Medicine Technology. 3 Credits.**

This writing intensive course is designed to provide a review of the administration, management, policies, and practices relevant to nuclear medicine technology. The leadership, legal, ethical and planning aspects of operating a nuclear medicine department are covered. Prerequisites: admission to the NMED program and a grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C.

**NMED 495. Special Topics in Nuclear Medicine Technology. 1-3 Credits.**

A study of selected current topics in nuclear medicine technology. Prerequisites: permission of the program director.

**NMED 497. Directed Study in Nuclear Medicine Technology. 1-3 Credits.**

Directed study in a topic relevant to nuclear medicine technology. Prerequisites: Permission of the program director.

## NURS - Nursing

### NURSING Courses

**NURS 300. Introduction to Nursing Theories and Concepts I. 3 Credits.**

Emphasis is placed on concepts and theories underlying professional nursing practice, the nursing process, and therapeutic nurse-client communication. Corequisite: NURS 302. Prerequisite: admission to the B.S.N. program.

**NURS 301. Introduction to Nursing Theories and Concepts II. 3 Credits.**

This course emphasizes theories specific to nursing and their relevance to the practice of professional nursing. Corequisite: NURS 303. Prerequisite: NURS 300.

**NURS 302. Health Assessment Clinical Laboratory. 2 Credits.**

This clinical laboratory course emphasizes the assessment phase of the nursing process. Skill acquisition in health assessment and health history interviewing is facilitated by supervised practice, faculty demonstration, and self-paced learning in the audio-visual laboratory. Prerequisite: admission to the B.S.N. program. Corequisite: NURS 300.

**NURS 303. Fundamentals of Nursing Practice. 2 Credits.**

This clinical course emphasizes the supervised application of health assessment skills, nursing process, and clinical nursing techniques in clinical laboratory and acute care settings. Corequisite: NURS 301. (qualifies as a CAP experience).

**NURS 305. Health Assessment. 3 Credits.**

This course emphasizes the physical assessment phase of the nursing process. For registered nurse students only. Prerequisite: admission to the B.S.N. program.

**NURS 306. Theoretical Foundation of Professional Nursing Practice. 3 Credits.**

This course focuses on selected nursing models, concepts, and theories as supporting frameworks for professional nursing practice. Emphasis is placed on the utilization of nursing theory as a methodology for improving nursing practice in various client situations and practice settings. For registered nurse students only. Prerequisite: admission to the B.S.N. program. Pre- or corequisite: NURS 401.

**NURS 310. Therapeutic Diets I. 1 Credit.**

This course focuses on concepts of normal nutrition. Emphasis is placed on understanding the impact of various nutrients on the body. Prerequisite: admission to the B.S.N. program.

**NURS 311. Therapeutic Diets II. 1 Credit.**

This course builds upon NURS 310 and introduces the student to selected therapeutic diets. Emphasis is placed on restrictive diets associated with maternal-infant and selected medical-surgical processes. Prerequisite: NURS 310 or permission of instructor.

**NURS 312. Therapeutic Diets III. 1 Credit.**

This course focuses on therapeutic diets associated with selected medical/surgical and pediatric disease processes. Prerequisites: NURS 310 and NURS 311.

**NURS 320. Adult Health Nursing I. 3 Credits.**

This lecture course focuses on the adult client experiencing alteration and/or adaptations in bodily defense mechanisms. Emphasis is on the use of the nursing process to assist adult clients to adapt to the body's breakdown of defense mechanisms. Corequisite: NURS 321. Prerequisites: junior standing in the B.S.N. program and completion of NURS 300, NURS 301, NURS 302, NURS 303, and NURS 374.

**NURS 321. Clinical Management: Adult Health Nursing I. 2 Credits.**

This clinical course focuses on the nursing process with adult clients experiencing alterations/adaptations in bodily defense mechanisms. The concepts inclusive in the didactic component (NURS 320) will be actualized on general surgical nursing units and oncology units. Corequisite: NURS 320. Prerequisites: junior standing in the B.S.N. program and completion of NURS 300, NURS 301, NURS 302, NURS 303, and NURS 374. (qualifies as a CAP experience).

**NURS 330. Nursing Care of the Childbearing Family. 3 Credits.**

This lecture course focuses on the theoretical and applied concepts related to the care of families experiencing pregnancy and childbirth. Emphasis is on the dynamic familial, societal, psychologic and physiologic changes which occur in this stage of family and personal development. The role of the nurse as assistive and family-centered provider of care is a major focus. Corequisite: NURS 331. Prerequisites: junior standing in the B.S.N. program and completion of NURS 320 and NURS 321.

**NURS 331. Clinical Management of the Childbearing Family. 1 Credit.**

This clinical course provides the opportunity for planning and provision of nursing care to the childbearing family. Emphasis is on the use of the nursing process to plan, provide and coordinate quality care. Students are expected to demonstrate responsibility and accountability for personal actions as well as a respect for families and clients. Corequisite: NURS 330. Prerequisites: junior standing in the B.S.N. program and completion of NURS 320 and NURS 321. (qualifies as a CAP experience).

**NURS 340. Adult Health Nursing II. 3 Credits.**

This lecture course focuses on the adult experiencing alteration/adaptation in organ and system mechanisms. Emphasis is on the use of the nursing process to assist adult clients to adapt to system related insults. Corequisite: NURS 341. Pre- or Corequisite: NURS 375. Prerequisites: junior standing in the B.S.N. program and completion of NURS 320 and NURS 321.

**NURS 341. Clinical Management: Adult Health Nursing II. 2 Credits.**

This clinical course focuses on the nursing process with adult clients experiencing alterations/adaptations in organ and system mechanisms. Concepts emphasized in the didactic component (NURS 340) will be actualized on general medical nursing units and orthopedic surgical units. Corequisite: NURS 340. Prerequisites: junior standing in the B.S.N. program and completion of NURS 320 and NURS 321. (qualifies as a CAP experience).

**NURS 350. Psychiatric/Mental Health Nursing. 3 Credits.**

This lecture course focuses on psychotherapeutic processes across the lifespan. Building on foundations from the social and behavioral sciences, emphasis is on the use of the nursing process in providing care to clients with acute and chronic illness in a variety of psychiatric settings. Corequisite: NURS 351. Prerequisite: junior standing in the B.S.N. program.

**NURS 351. Clinical Management of Psychiatric/Mental Health Problems. 1 Credit.**

This clinical course provides a mechanism for students to perform mental health assessments, plan nursing care, practice therapeutic communication techniques and observe group processes in both inpatient and outpatient settings. Corequisite: NURS 350. Prerequisite: junior standing in the B.S.N. program. (qualifies as a CAP experience).

**NURS 358. Studies in Professional Nursing. 2 Credits.**

The study of selected topics in professional nursing practice; designed to provide an in-depth exploration of current nursing issues. Topic titles denoted in Guide to Enrollment each semester. Prerequisite: admission to B.S.N. program.

**NURS 363. Nursing Science. 3 Credits.**

This course focuses on the theories and concepts utilized in the scientific investigation of nursing practice. Content emphasizes the development of skills necessary to be a consumer of nursing research. Prerequisite: admission to B.S.N. program. Co- or prerequisite: STAT 130M.

**NURS 369. Practicum: Studies in Clinical Nursing Practice. 1-3 Credits.**

The study of selected clinical practice applications in professional nursing practice; designed to provide an in-depth practicum in selected nursing practice areas. Students must have specific practicum arrangements (ex: externship) prior to registration. Prerequisite: admission to B.S.N. program and permission of undergraduate program director or chief departmental advisor.

**NURS 374. Nursing Process and Drug Therapy I. 2 Credits.**

This course addresses the general principles of drug therapy and beginning application of the nursing process as related to drug therapy for clinical situations involving individuals at all phases of the life cycle and at different levels of wellness. Prerequisite: admission to the B.S.N. program.

**NURS 375. Nursing Process and Drug Therapy II. 2 Credits.**

This course addresses drug therapy and continued application of the nursing process as related to drug therapy for clinical situations involving individuals at all phases of the life cycle and at different levels of wellness. Prerequisites: NURS 374 and junior standing in the B.S.N. program.

**NURS 387. Nursing Science. 3 Credits.**

This course focuses on the theories and concepts utilized in the scientific investigation of nursing practice. Content emphasizes the development of skills necessary to be a consumer of nursing research. An honors version of NURS 363. Open to Honors Program students only. Prerequisite: admission to the B.S.N. program.

**NURS 393. Clinical Skills for Nonnursing Majors. 2 Credits.**

Focuses on basic hygiene, comfort and safety skills required of health professionals providing diagnostic and/or supportive therapies to clients in a health care facility. May not be taken as required elective by nursing majors. Open to nuclear medicine technology students only. Prerequisites: junior standing and permission of the instructor.

**NURS 395. Topics. 1-3 Credits.**

Selected health-related topics of interest. Course descriptions and prerequisites are available from the chief academic advisor. Prerequisite: permission of the School of Nursing.

**NURS 396. Independent Study. 1-3 Credits.**

Nursing majors only. Selected health-related topics of interest to nursing majors. Selected health-related topics of interest to nursing majors. Course descriptions and prerequisites are available from the chief academic advisor. Prerequisite: permission of the School of Nursing.

**NURS 397. Independent Study. 1-3 Credits.**

Independent study of selected topics. Prerequisite: permission of the School of Nursing.

**NURS 398. Clinical Nursing Concepts I. 17 Credits.**

This advanced placement credit is awarded to the registered nurse who has demonstrated knowledge of selected basic clinical nursing concepts for the provision of nursing care to individuals experiencing health deviations. Awarded upon completion of 14 credits in major. Registered nurse students only.

**NURS 401. Career Pathway: Assessment. 4 Credits.**

This course focuses on basic skills required for success in the post-licensure baccalaureate nursing program. Emphasis is placed on career pathway assessment. Selected skills to be acquired include development of a professional portfolio, use of computers, APA professional writing format, library use and professional communication strategies. For registered nurse students only. Prerequisite: admission to the B.S.N. program.

**NURS 402. Career Pathway: Development. 4 Credits.**

This course focuses on further development of the post-licensure baccalaureate nursing student with an emphasis on expanding critical thinking skills, teaching-learning theories and application, professional resume development and exploration of nursing specialties and practice roles. For registered nursing students only. Prerequisite: Admission to the B.S.N. Program; Co- or prerequisite: NURS 401.

**NURS 403. Career Pathway: Expanding Horizons. 4 Credits.**

This course facilitates the completion of a professional portfolio for the post-licensure baccalaureate nursing student. Emphasis is on advanced professional communication strategies and reflective processes for professional role expansion and development. For registered nurse students only. Pre- corequisite: all other RN sequence nursing courses.

**NURS 420. Nursing Care of Infants and Children. 3 Credits.**

This lecture course provides a basis for understanding the nursing care of children of various ages. Emphasis is on the use of the nursing process to assist children as they encounter acute and chronic illness. The nurse's communication with and education of the family and child as individuals or as part of a group are discussed as a means of achieving the goal of comprehensive individualized child care in the home and in health care settings. Corequisite: NURS 421. Prerequisites: senior standing in the B.S.N. program and completion of NURS 340 and and NURS 341.

**NURS 421. Clinical Management of Infants and Children. 2 Credits.**

This clinical course emphasizes the provision of nursing care to infants and children suffering from acute and chronic illnesses. Through the use of the nursing process, students provide and coordinate care, serving as client advocates. Students are expected to demonstrate responsibility for personal actions related to the practice of nursing. Corequisite: NURS 420. Prerequisites: senior standing in the B.S.N program and completion of NURS 340 and NURS 341. (qualifies as a CAP experience).

**NURS 430. Nursing and the Gerontological Client. 2 Credits.**

This course focuses on the nursing needs of the gerontological client. Emphasis is on the multi/complex needs of the older adult. Prerequisite: admission to the B.S.N. program.

**NURS 431. Transition to Professional Nursing Practice. 3 Credits.**

This capstone clinical course allows students to practice in selected areas. The focus of this practicum is to enhance the clinical decision making and nursing intervention skills of the senior student. This capstone course must be completed in the last semester of the BSN curriculum. Prerequisites: senior standing in the B.S.N. program and completion of NURS 340 and NURS 341.

**NURS 440. Nursing Process in Rehabilitation. 2 Credits.**

This course focuses on using the nursing process to prevent further dependence and restore maximum levels of function to the client who has a physical disability. Corequisite: NURS 441. Prerequisites: senior standing in the B.S.N. program and completion of NURS 340, NURS 341, and NURS 450.

**NURS 441. Clinical Management of Rehabilitation Clients. 2 Credits.**

This clinical course emphasizes the provision of nursing care to clients to prevent further dependence and restore levels of function. Corequisite: NURS 440. Prerequisites: senior standing in the B.S.N. program and completion of NURS 340, NURS 341, and NURS 450. (qualifies as a CAP experience).

**NURS 450. Adult Health Nursing III. 3 Credits.**

This course focuses on the adaptation of clients to critical illness. Content emphasizes concepts and theories of crisis and the utilization of the nursing process with critically ill clients who require assistance in adapting to their condition. Corequisite: NURS 451. Prerequisites: senior standing in the B.S.N. program and completion of NURS 340 and NURS 341.

**NURS 451. Clinical Management: Adult Health Nursing III. 2 Credits.**

This clinical course emphasizes the provision of nursing care to clients who are critically ill. Through the use of the nursing process, students will provide and coordinate care and serve as client advocates in a variety of critical care settings. Corequisite: NURS 450. Prerequisites: senior standing in the B.S.N. program and completion of NURS 340 and NURS 341. (qualifies as a CAP experience).

**NURS 458. Studies in Professional Nursing. 3 Credits.**

The study of selected topics in professional nursing practice; designed to provide an in-depth exploration of current nursing issues. Prerequisite: admission to B.S.N. program or permission of instructor.

**NURS 464. Developing Case Management Skills: Clinical Pathways and Outcomes. 3 Credits.**

The focus of this course is twofold: exploration and discussion of the historical, theoretical and international contexts of the emergence and value of managing care, clinical pathways and clinical outcomes in nursing and health care practices as well as the practical application of the principles in each. For registered nurse students only. Prerequisite: admission to the B.S.N. program.

**NURS 470. Community Health Nursing I. 2 Credits.**

This course focuses on family and community health nursing. Content emphasizes concepts and themes of families and communities and the use of the nursing process to assist in promoting and maintaining health. Application of course concepts through experience and interactions with health care coalition groups is emphasized. Prerequisite: senior standing in the B.S.N. program.

**NURS 471. Community Health Nursing II. 2 Credits.**

This course focuses on family and community health nursing. Content emphasizes concepts and themes of families and communities and the use of the nursing process to assist in promoting and maintaining health. Application of course concepts through experiences and interactions with health care coalition groups is emphasized. Prerequisite: senior standing in the B.S.N. program. (qualifies as a CAP experience).

**NURS 480W. Leadership and Management. 3 Credits.**

Theoretical and applied concepts of nursing leadership and management within the health care setting. Focuses on the management issues and responsibility of the new graduate in contemporary professional nursing practice. Emphasis is on communication and complex organization, decision-making, leadership and motivation, techniques of delegation and evaluation, conflict management and change, and risk management and quality assurance. Prerequisites: senior standing in the B.S.N. program, completion of NURS 340 and NURS 341, and completion of ENGL 110C and ENGL 211C or 221C or 231C with a grade of C or better. (This is a writing intensive course.).

**NURS 487W. Leadership and Management. 3 Credits.**

Theoretical and applied concepts of leadership and management within the health care setting. Focuses on management issues and responsibilities of new graduates. Emphasis is on communication, decision making, leadership motivation, delegation, evaluation, conflict and change. An honors version of NURS 480W. Open to Honors College students only. Prerequisites: senior standing in the B.S.N. program, completion of NURS 340 and NURS 341, and completion of ENGL 110C and ENGL 211C or 221C or 231C with a grade of C or better. (This is a writing intensive course.).

**NURS 489. Transition to Professional Nursing Practice. 3 Credits.**

This capstone clinical course allows students to practice in selected areas. The focus of this practicum is to enhance the clinical decision making and nursing intervention skills of the senior student. An honors version of NURS 431. Open to Honors College students only. Prerequisite: senior standing in the B.S.N. program.

**NURS 490W. Nursing Leadership. 3 Credits.**

This course focuses on utilization of strategies from leadership, management, systems and change theories to facilitate professional nursing practice. Emphasis is placed on the professional nurse as a leader in the health care system. The influence of organizational behavior, proactive political action, professional image and case management on nursing practice is examined. For registered nurse students only. Prerequisite: admission to the B.S.N. program and completion of ENGL 110C and ENGL 211C or 221C or 231C with a grade of C or better; Co- or prerequisite: NURS 401. (This is a writing intensive course.).

**NURS 492. Community Health Nursing. 3 Credits.**

This course focuses on professional nursing practice with families and communities as clients. Emphasis is on community wellness, interaction with political influences and epidemiological principles. For registered nurse students only. Prerequisites: admission to the B.S.N. program.

**NURS 495/595. Topics in Nursing. 1-3 Credits.**

The study of selected topics that may not be offered regularly. Special topics will appear in the schedule of classes each semester. Prerequisite: Permission of the instructor.

**NURS 498. Clinical Nursing Concepts II. 16 Credits.**

16 credits. This advanced placement credit is awarded to the registered nurse who has demonstrated knowledge of selected complex nursing concepts for the provision of nursing care to individuals and families experiencing health deviations. Awarded upon completion of 26 credits in the major. For registered nurse students only.

## OEAS - Ocean, Earth and Atmospheric Sciences

### OCEAN, EARTH AND ATMOSPHERIC SCIENCES Courses

**OEAS 106N. Introductory Oceanography. 4 Credits.**

Lecture 3 hours; laboratory 2 hours; 4 credits each semester. This course emphasizes geology and chemistry covering the formation and constitution of the earth and the ocean basins. Laboratory emphasizes practice of basic scientific methods. Knowledge of the metric system, scientific notation, ratio and proportion, and graphing is required. Field trip required.

**OEAS 108N. Understanding Global Climate Change. 4 Credits.**

Lecture, 3 hours; Lab, 2 hours. 4 credits. What is the science behind global climate change? How reliable are forecasts of future global warming? This course examines these questions to evaluate the likelihood and potential severity of anthropogenic climate change in the coming centuries. It includes an overview of the physics of the greenhouse effect, an overview of the global carbon cycle and its role as a global thermostat; an examination of predictions and reliability of model forecasts of future climate change; and examination of local impacts of global climate change (e.g., sea level rise in the Tidewater area).

**OEAS 110N. Earth Science. 4 Credits.**

This is an introductory course in geological sciences. The course relates the principles of natural science to Earth as a planet, its resources, and its environment. The effects of geologic processes on the environment are stressed. A student receiving credit for OEAS 110N cannot receive credit for OEAS 111N.

**OEAS 111N. Physical Geology. 4 Credits.**

This course introduces the student to the study of the materials, structures, and processes of the Earth. Present terrestrial resources are interpreted in terms of the internal and surface processes that formed them. A student receiving credit for OEAS 111N cannot receive credit for OEAS 110N.

**OEAS 112N. Historical Geology. 4 Credits.**

The evolution of the continents, ocean basins, mountain chains, and the major life forms throughout Earth's history are studied chronologically and are related to the physical and biological changes that have caused them. Prerequisite: OEAS 110N or OEAS 111N.

**OEAS 126N. Honors: Introductory Oceanography. 4 Credits.**

Open only to students in the Honors College. Special honors section of OEAS 106N. In addition to broad coverage of the geology, chemistry, physics and biology of the ocean, students will read scientific papers with current environmental problems. There will be several field trips to nearby ecosystems.

**OEAS 195. Topics. 1-4 Credits.**

Special topics in physical, geological, chemical or biological oceanography.

**OEAS 196. Topics. 1 Credit.**

Special topics in physical, geological, chemical, or biological oceanography.

**OEAS 210. Environmental Earth Science. 4 Credits.**

Lecture 3 hours; laboratory 2 hours; 4 credits. Dynamic processes of the land, ocean, and atmosphere and how they affect people. Topics include plate tectonics; rocks and minerals; soil and water; weather and climate; tides and currents; limits to natural resources. OEAS 210 is a required course for the IDS program in Early Childhood Education. Does not satisfy OEAS major degree requirements.

**OEAS 295. Special Topics. 3 Credits.**

An investigation of a selected problem in physical, geological, chemical, or biological oceanography. Prerequisite: sophomore standing or permission of the instructor.

**OEAS 302. Environmental Geology. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: junior standing and an 8-hour sequence in a General Education science course. Geologic resources and processes that limit human activities and pose significant hazards. Does not satisfy OEAS major degree requirements.

**OEAS 303. Paleontology. 3 Credits.**

Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisite: OEAS 112N. Concepts of paleontology and application of paleontological data to problems in other scientific fields are discussed. Major invertebrate phyla represented in the fossil record are studied. Laboratory work includes preparation techniques and study of representative examples of important fossil types.

**OEAS 306. Oceanography. 3 Credits.**

General survey of physical, geological, chemical and biological oceanography. The application of skills from mathematics, geology, physics, biology and chemistry for the solution of oceanographic problems. Prerequisites: MATH 211, BIOL 115N or BIOL 121N and BIOL 122N, CHEM 121N-122N, OEAS 111N, and PHYS 111N or 231N.

**OEAS 310. Global Earth Systems. 3 Credits.**

Core course for ocean and earth sciences majors that examines the processes linking the Earth's atmosphere, lithosphere, and hydrosphere into an interactive system. Prerequisites: BIOL 115N or BIOL 121N and BIOL 122N, CHEM 121N-122N, MATH 211, and OEAS 111N.

**OEAS 313. Mineralogy. 3 Credits.**

Lecture 2 hours; laboratory 3 hours; 3 credits. Prerequisite: CHEM 121N-122N. Corequisite: PHYS 111N or 231N. The concepts of mineralogy are developed on the basics of geometrical, crystallographic, chemical bonding, crystal structures, and physical and optical properties. Mineral associations and genesis will be emphasized. Laboratory exercises include mineral identification by physical and optical properties, X-ray diffraction, and crystal form.

**OEAS 314. Petrology. 4 Credits.**

Lecture 3 hours; laboratory 3 hours; 4 credits. Prerequisite: OEAS 313. The study of igneous, sedimentary, and metamorphic petrology is developed using the concepts of crystal growth, phase equilibria, mineral associations, and composition of the Earth's crust and mantle. Laboratory exercises include hand specimen, microscopic, and X-ray diffraction identification and origin of rocks.

**OEAS 320. Sedimentology and Stratigraphy. 4 Credits.**

Lecture 3 hours; laboratory 3 hours; 4 credits. Prerequisite: OEAS 110N or 111N. The origin, transport, and deposition of sediments with emphasis on interpretation of sediment sequences, principles and methods of correlation. Laboratory exercises involve field sampling, textural analyses, and sedimentary structures. Field trip required.

**OEAS 344W. Geomorphology. 3 Credits.**

Lecture 2 hours; laboratory 3 hours; 3 credits. Prerequisites: OEAS 112N, 314 or 320 AND either ENGL 211C or 221C or 231C with a grade of C or better; or permission of instructor. Geologic processes that shape the earth's surface. Laboratory studies involve interpretation of topographic maps, soil maps, and aerial photographs. Field trip required.

**OEAS 367. Cooperative Education. 1-3 Credits.**

1-3 credits. Prerequisites: junior standing and permission of the department. Available for pass/fail grading only. Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and the Career Management program prior to the semester in which the experience is to take place. (qualifies as a CAP experience).

**OEAS 368. Internship in Ocean and Earth Sciences. 1-3 Credits.**

Available for pass/fail grading only. Students gain on the job work experience related to their undergraduate curriculum. Prerequisites: junior standing, permission of department and a 3.00 grade point average. (qualifies as a CAP experience).

**OEAS 369. Practicum. 1-3 Credits.**

1-3 credits. Prerequisite: junior standing, permission of department and must have declared ocean and earth sciences major or minor. (qualifies as a CAP experience).

**OEAS 395. Selected Topics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: completion of 8 hours of a laboratory science. A nonmathematical course based on topics such as urban geology, urban biometeorology, and intelligent life in the universe. Specific topics will be announced each semester.

**OEAS 402/502. Field Experiences in Oceanography for Teachers. 3 Credits.**

Lecture 2 hours; field experience 2 hours; 3 credits. Prerequisite: background in K-12 Education. Field and laboratory experiences in oceanography including hands-on experience using equipment and methods suitable for middle and secondary education professionals. Course will provide understanding of oceanic processes using simple field and laboratory experiments. Not available for credit for OEAS majors and minors.

**OEAS 403W/503. Aquatic Pollution. 3 Credits.**

This course will present basic ecological principles relevant to water pollution and toxicology. Topics will cover runoff, eutrophication, sewage treatment, industrial waste, oil pollution, pesticides, and plastics in the sea. Case studies provide focal points for consideration of issues in making decisions and setting policy. (This is a writing intensive course.) Prerequisites: grade of C or better in ENGL 211C or 221C or 231C and at least two semesters of one of the following: BIOL 115N-116N or BIOL 121N, BIOL 122N, BIOL 123N, and BIOL 124N, CHEM 121N-122N and CHEM 123N-124N, OEAS 111N-112N, PHYS 111N-112N, OEAS 106N-107N or 126N-127N.

**OEAS 404/504. Environmental Physiology of Marine Animals. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing; upper level biology courses. Functional morphology and physiological aspects of growth and ecological energetics of marine animals. Basic concepts and habitat comparisons.

**OEAS 405/505. Physical Oceanography. 3 Credits.**

Physics of the ocean: properties of seawater and their distribution; water mass formation; mass and energy flows; waves; tides; models; estuarine and coastal processes. An elective for science and engineering majors. Prerequisites: C or better in MATH 211 and either PHYS 232N or two semesters of hydraulics.

**OEAS 406/506. Matlab. 1 Credit.**

This course is designed to introduce students to Matlab programming and to develop skills utilizing this program for data analysis. Prerequisites: C or better in MATH 211 or permission of instructor.

**OEAS 408/508. Introductory Soils. 4 Credits.**

Nature and properties of soils. Physical and chemical processes in soils and their influence on plant growth, the movement of water, and pollutants. Importance of soil properties in determining urban, industrial and agricultural uses. Prerequisite: CHEM 121N-122N and CHEM 123N-124N.

**OEAS 410/510. Chemical Oceanography. 4 Credits.**

Lecture 3 hours; laboratory 3 hours; 4 credits. Prerequisites: CHEM 121N-122N and CHEM 123N-124N, OEAS 306 or consent of instructor. Chemical composition of the ocean and the chemical, biological, geological and physical processes controlling it. Laboratory experiments include determination of salinity, oxygen, and nutrients, and a field sampling trip is undertaken.

**OEAS 411/511. Structural Geology. 4 Credits.**

Lecture 3 hours; laboratory 2 hours; 4 credits. Prerequisite: OEAS 320 or permission of instructor. Recognition, habitat, and origin of deformed geologic structures. Relationships between structural patterns and tectonic settings. Laboratory sessions emphasize cartographic and stereographic projections, map interpretation, and hand sample evaluation. Weekend field trip required.

**OEAS 412/512. Global Environmental Change. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: OEAS 306 and 310. An examination of the development of the earth as a habitable planet, from its origin to human impacts on global biogeochemical cycles on land, and in the oceans and atmosphere.

**OEAS 413/513. Environmental Geochemistry. 3 Credits.**

Low temperature geochemistry of surface and near-surface materials and processes. Weathering and the geochemical cycle as influenced by environment. Prerequisites: CHEM 121N-CHEM 122N and CHEM 123N-CHEM 124N and OEAS 313.

**OEAS 415/515. Waves and Tides. 3 Credits.**

Causes, nature, measurement and analysis of water waves and tides. Mathematical and graphical application to wave and tide problems. Prerequisites: C or better in MATH 212 and PHYS 232N or permission of the instructor.

**OEAS 416/516. Electronics and Oceanographic Instrumentation. 4 Credits.**

Lecture/Lab, 3 hours. 4 credits. Prerequisites: PHYS 232N or 112N, OEAS 306, OEAS 310, STAT 310 or STAT 330. The course will consist of brief lectures and hands-on laboratory exercises, in which students will learn to build, use, and debug electronic devices relevant to ocean and earth science applications. Topics covered will include circuit theory, power supplies and budgets, transducers and amplifiers, computerized data acquisition, instrument control, signal conditioning and resolution.

**OEAS 418/518. Chemical Limnology. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: OEAS 306. Chemical cycling in lakes and reservoirs, and interactions with biological and physical processes; quantitative modeling of lake geochemistry.

**OEAS 419/519. Spatial Analysis of Coastal Environments. 3 Credits.**

Lecture 1.5 hours; laboratory 3 hours; 3 credits. Prerequisites: GEOG 404/504. The course integrates remotely sensed and field techniques for scientific investigation and practical management of coastal environmental systems. Spatial modeling of coastal processes and management tools using geographic information system (GIS).

**OEAS 420/520. Hydrogeology. 3 Credits.**

Lecture 2 hours; laboratory 2 hours; 3 credits. Prerequisites: OEAS 320, MATH 211, PHYS 111N-112N or 231N-232N, or permission of the instructor. Topics covered will include the occurrence and movement of surface and subsurface water, the nature and distribution of permeable rocks and strata, field techniques used in ground-water studies, and the flow of ground-water to wells.

**OEAS 426/526. Concepts in Oceanography for Teachers. 3 Credits.**

3 credits. Prerequisite: junior standing or permission of the instructor. This web-based course will provide a practical introduction to oceanography for earth science teachers. It is particularly aimed at current science teachers attempting to become certified in earth science education. Topics will include discussions of geological, biological, physical and chemical oceanography. Not available for credit for OEAS majors and minors.

**OEAS 430/530. Introduction to Geophysics. 3 Credits.**

3 cr. Lecture. Prerequisites: OEAS 111N, MATH 211, and PHYS 111N/112N or PHYS 231N/232N. Introduction to the physics of the earth, including plate tectonics, volcanism, earthquakes and seismology, gravity, the Earth's magnetic field, geophysical remote sensing, and mantle convection.

**OEAS 431/531. Sedimentary Petrology. 3 Credits.**

Lecture 2 hours; laboratory 3 hours; 3 credits. Prerequisite: OEAS 320. The chemical aspects of sediments and sedimentary rock needed for modern geologic and oceanographic studies. Optical petrology and x-ray diffraction are emphasized in the laboratory with particular attention to clay mineralogy. Field trip required.

**OEAS 432. Introduction to Thermo- and Fluid Dynamics for Oceanographers. 3 Credits.**

Lecture, 3 hours. 3 credits. Prerequisite: MATH 211, 212, PHYS 231N and 232N. The objective of this course is to impart the basic knowledge of thermo- and fluid dynamics required to understand these concepts and theories in physical oceanography.

**OEAS 433. Introduction to Geophysical Fluid Dynamics. 3 Credits.**

Lecture, 3 hours; 3 credits. Prerequisite: OEAS 432. An introduction to geophysical fluid dynamics. The course is concerned with the fundamentals of the dynamics of ocean flows.

**OEAS 440/540. Biological Oceanography. 4 Credits.**

Marine organisms and their relationship to physical and chemical processes in the ocean. Laboratory study of local marine organisms, marine ecosystem and sampling techniques. Includes identification, data analysis and field trips. Prerequisite: OEAS 106N, OEAS 126N or OEAS 306.

**OEAS 441. Ocean and Earth Sciences Field Study I. 3 Credits.**

Interdisciplinary investigation of selected sites in Southeast Virginia that includes field sampling, sample analyses, data interpretation and integration, and group report preparation and presentations. Focuses on site selection and evaluation mapping, sampling, and sample analyses. Oral presentations of results will be made by each student. Prerequisites: OEAS 306 and OEAS 310; CHEM 123N and CHEM 124N, BIOL 116N or BIOL 123N and BIOL 124N, or OEAS 303; PHYS 112N or PHYS 232N; MATH 212; all prerequisite courses must be passed with a C or better grade.

**OEAS 442W. Ocean and Earth Sciences Field Study II. 3 Credits.**

Lecture 1 hour; laboratory 4 hours; 3 credits. Prerequisites: a grade of C or better in ENGL 211C or 221C or 231C; OEAS 441. Interdisciplinary investigation of selected sites in Southeast Virginia that includes field sampling, sample analyses, data interpretation and integration, and group report preparation and presentations. Focuses on site selection and evaluation mapping, sampling, and sample analyses. Oral presentations of results will be made by each student. (This is a writing intensive course.).

**OEAS 443. General Meteorology. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. Structure of the atmosphere; air masses, fronts, and cyclones; ice and water precipitation; hurricanes, tornadoes, and thunderstorms; introduction to modern weather forecasting; weather modification and air pollution. Required for earth science track; not available as OEAS upper-division elective.

**OEAS 444. Communicating Ocean Science to Informal Audiences. 3 Credits.**

This course provides Earth Science Education students with instruction on presenting scientific information to informal audiences (K through adult). The course provides techniques and practical experience in designing informal lessons. For Earth Science Education track students, OEAS 444 and OEAS 445 can replace OEAS 441/OEAS 442W. It is available as an elective for all other students. Prerequisites: OEAS 306 and OEAS 310.

**OEAS 445. Communicating Ocean Science to Informal Audiences. 3 Credits.**

This course provides Earth Science Education students with instruction on presenting scientific information to informal audiences (K through adult). Students will develop more in-depth presentations and extended practice presenting their materials on the Virginia Aquarium floor. For Earth Science Education track students, OEAS 444 and OEAS 445 can replace OEAS 441/OEAS 442W. It is available as an elective for all other students. Prerequisite: OEAS 444.

**OEAS 446/546. Quaternary Geology. 3 Credits.**

3 cr. Lecture. Prerequisite: OEAS 344W. Geological effects of Cenozoic climate changes and tectonic movements on marine and terrestrial systems. Weekend field trips to study landscapes and deposits in the coastal plain and Appalachian provinces.

**OEAS 448/548. Population Ecology. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MATH 211. This course uses conceptual and mathematical models to understand how populations grow and persist in space and time. Both plants and animals are discussed.

**OEAS 451/551. Data Collection and Analysis in Oceanography. 3 Credits.**

This course introduces the student to basic oceanographic tools used to obtain and analyze information. The student will use various oceanographic instruments to obtain data at different locations in the Chesapeake Bay. Data obtained with these instruments will be processed and analyzed using the data analysis techniques discussed in class. The data will then be used to answer a particular question related to the temporal and spatial variability in a natural system. Prerequisites: OEAS 306 or OEAS 310 and MATH 211 and MATH 212.

**OEAS 455/555. Introduction to Geomicrobiology. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: OEAS 303. This course explores microorganisms in marine environments and their role in the fossil record. Students will examine bacteria and protista and investigate Earth's history during the Precambrian. One field trip.

**OEAS 487. Honors Research in Ocean and Earth Sciences. 1-3 Credits.**

Supervised study in a field of individual interest. Research results are reported in a public oral presentation and a thesis. Prerequisite: senior standing and admission to the Academic Honors Program.

**OEAS 488. Honors Research in Ocean and Earth Sciences. 1-3 Credits.**

Supervised study in a field of individual interest. Research results are reported in a public oral presentation and a thesis. Prerequisite: senior standing and admission to the Academic Honors Program.

**OEAS 495/595. Special Topics. 4 Credits.**

Lectures, field and laboratory studies; 1-4 credits each semester. Prerequisites: junior standing and permission of the instructor. An investigation of a selected problem in physical, geological, chemical, or biological oceanography.

**OEAS 497. Special Problems and Research. 1-3 Credits.**

1-3 credits. Prerequisite: junior standing. Independent reading and study on a topic to be selected with the direction of an instructor.

## **OPHS - Ophthalmic Science**

### **OPHTHALMIC SCIENCE Courses**

**OPHS 311. Motility. 4 Credits.**

Lecture 3 hours; laboratory 3 hours; 4 credits. Prerequisite: admission in the ophthalmic technology program. Fundamental study of muscle anatomy and physiology, vision testing for infants and children, and ocular motor evaluation.

**OPHS 312. Ocular Anatomy. 3 Credits.**

In-depth study of the anatomy and physiology of the ocular system and medical terminology. Prerequisites: admission in the ophthalmic technology program.

**OPHS 320. Optics and Refraction. 5 Credits.**

Lecture 2 hours; laboratory 6 hours; 5 credits. Prerequisite: admission in the ophthalmic technology program. Lensometry, visual function and testing, retinoscopy, refractometry, and basic optics.

**OPHS 321. Visual Pathway. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: admission in the ophthalmic technology program. Manual and Automated Perimetry, visual pathway, associated lesions, glaucoma and tonometry.

**OPHS 330. Pharmacology and Systemic Disease. 3 Credits.**

Lecture 3 hours; laboratory 1 hour; 3 credits. Prerequisite: admission in the ophthalmic technology program. General technical skills, systemic disease, case histories, basic pharmacology.

**OPHS 335. Technical Skills. 5 Credits.**

Advanced retinoscopy and refractometry, continuation of optics, basic contact lens fitting, photography, and introduction to fluorescein angiography. Prerequisites: admission in the ophthalmic technology program.

**OPHS 337. Advanced Motility. 4 Credits.**

Clinical experience 8 hours; 4 credits. Prerequisite: admission in the ophthalmic technology program. Advanced motility with sensory evaluation. (qualifies as a CAP experience).

**OPHS 350. Advanced Technical Skills. 5 Credits.**

Continuation of technical skills with topics to include: low vision, opticianry, ultrasonography, electrophysiology, and introduction to the OR setting (qualifies as a CAP experience.) Prerequisites: admission in the ophthalmic technology program.

**OPHS 352. Education in Private Practice Methods. 2 Credits.**

Externship in private ophthalmologist's office. Prerequisites: admission in the ophthalmic technology program.

**OPHS 420. Specialty Rotation I. 5 Credits.**

(2 month rotation) Clinical experience 20 hours; 5 credits. Prerequisite: admission in the ophthalmic technology program. Ten-week rotation in each of the following: pediatric ophthalmology, contact lenses, low vision, ophthalmic surgical assisting, and advanced diagnostic testing. (qualifies as a CAP experience).

**OPHS 421. Specialty Rotation II. 5 Credits.**

(2 month rotation) Clinical experience 20 hours; 5 credits. Prerequisite: admission in the ophthalmic technology program. Ten-week rotation in each of the following: pediatric ophthalmology, contact lenses, low vision, ophthalmic surgical assisting, and advanced diagnostic testing. (qualifies as a CAP experience).

**OPHS 422. Specialty Rotation III. 5 Credits.**

(2 month rotation) Clinical experience 20 hours; 5 credits. Prerequisite: admission in the ophthalmic technology program. Ten-week rotation in each of the following: pediatric ophthalmology, contact lenses, low vision, ophthalmic surgical assisting, and advanced diagnostic testing. (qualifies as a CAP experience).

**OPHS 423. Specialty Rotation IV. 5 Credits.**

(2 month rotation) Clinical experience 20 hours; 5 credits. Prerequisite: admission in the ophthalmic technology program. Ten-week rotation in each of the following: pediatric ophthalmology, contact lenses, low vision, ophthalmic surgical assisting, and advanced diagnostic testing. (qualifies as a CAP experience).

**OPHS 430. Advanced Topics I. 3 Credits.**

Seminar 3 hours; 3 credits. Prerequisite: admission in the ophthalmic technology program. Lectures on various advanced topics in ophthalmic disease and special testing.

**OPHS 440. Advanced Topics II. 3 Credits.**

Seminar 3 hours; 3 credits. Prerequisite: admission in the ophthalmic technology program. Lectures on various advanced topics in ophthalmology and Board Exam review.



# OPMT - Operations Management

## OPERATIONS MANAGEMENT Courses

### OPMT 303. Operations Management. 3 Credits.

Lecture 3 hours, 3 credits. Prerequisites: DSCI 206 or STAT 130M, and a declared major in the university or permission of the Dean's Office of the CBPA. Examines strategic, tactical and operational issues in the planning and control of manufacturing and service delivery systems. This course examines such topics as process design, capacity and materials planning and control, inventory management, facility layout, quality and work management.

### OPMT 367. Cooperative Education. 1-3 Credits.

1-3 credits. Prerequisite: junior standing and a declared major in the university or permission of the Dean's Office of the CBPA. Approval for enrollment and allowable credits is determined by the department and Career Management in the semester prior to enrollment. Available for pass/fail grading only. (qualifies as a CAP experience).

### OPMT 368. Student Internship. 1-3 Credits.

1-3 credits. Prerequisite: junior standing and a declared major in the university or permission of the Dean's Office of the CBPA. Approval for enrollment and allowable credits is determined by the department and Career Management in the semester prior to enrollment. Available for pass/fail grading only. (qualifies as a CAP experience).

### OPMT 369. Practicum. 1-3 Credits.

1-3 credits. Prerequisites: OPMT 303T and a declared major in the university or permission of the Dean's Office of the CBPA. Approval for enrollment and allowable credits are determined by the department CAP adviser and the Career Management Center in the semester prior to enrollment. Student participation in a professional work experience. Available for pass/fail grading only. (qualifies as a CAP experience).

### OPMT 495. Selected Topics in Operations Management. 3 Credits.

3 credits. Prerequisite: Senior standing and a declared major in the university or permission of the Dean's Office of the CBPA. Selected advanced topics in operations management. Taught on an occasional basis. See the course schedule for the particular topic being taught each semester.

### OPMT 497. Independent Study in Operations Management. 1-3 Credits.

1-3 credits. Prerequisite: permission of the department. Affords students the opportunity to undertake independent study under the direction of a faculty member.

## PAS - Public Affairs and Service

### PUBLIC AFFAIRS AND SERVICE Courses

#### PAS 300. Foundations of Public Service. 3 Credits.

Lecture 3 hours, 3 credits. Prerequisite: A declared major in the University or permission of the Dean's Office of the CBPA. An introduction to the study of public service. Emphasis is placed on the history and framework of public service and the study and practice of public administration.

#### PAS 301. Ethics, Governance and Accountability in Public Service. 3 Credits.

Lecture 3 hours, 3 credits. Prerequisite: A declared major in the University or permission of the Dean's Office of the CBPA. This course provides an overview of ethics, governance and accountability in public service, with particular emphasis on the linkages between these three concepts. The focus is on the ethical context and implications of public management, governance structures, and public sector accountability, particularly in relation to critical social, political, and economic issues.

#### PAS 368. Internship in Public Service. 1-3 Credits.

1-3 credits. Student participates in a relevant public service-related work experience. Approval for enrollment and allowable credits is determined by the PAS CAP advisor and the Career Management Center in the semester prior to enrollment. (Qualifies as a CAP experience.).

#### PAS 395. Selected Topics in Public Administration. 3 Credits.

3 credits. Prerequisite: A declared major in the University or permission of the Dean's Office of the CBPA. Designed for the study of selected topics in public administration.

#### PAS 408. Public Service Films. 3 Credits.

From the invention of the first simple "moving pictures" more than 130 years ago to the latest multi-million dollar, high-tech blockbuster, films have served as a vehicle for both political messages and societal critiques. As a unifying theme, we will focus our analysis on the films' implications for the study and practice of public service. Prerequisites: Junior standing and declared major in the University or permission of CBPA Dean's Office.

#### PAS 409. Leadership and Cultural Competence. 3 Credits.

This course focuses on the study of contemporary leadership theory and practice, with particular emphasis on public and non-profit sectors. The critical themes of ethics and cultural competence are woven throughout the course. Prerequisites: Junior standing and declared major in the University or permission of CBPA Dean's Office.

#### PAS 410. Public and Non-profit Organization. 3 Credits.

Lecture 3 hours, 3 credits. Prerequisite: PAS 300 or PAS 301 or permission of the instructor, and a declared major in the University or permission of the Dean's Office of the CBPA. An introduction to the study and practice of public and non-profit agencies. The course is designed to explore fundamental issues of organizational structure, management, and operations of public and non-profit organizations in modern American society.

#### PAS 411. Multi-Sector Partnerships for Public Service. 3 Credits.

Lecture 3 hours, 3 credits. Prerequisites: PAS 300 or PAS 301 or permission of the instructor, and a declared major in the University or permission of the Dean's Office of the CBPA. This course examines the interplay between the public, private, and non-profit sectors. Particular emphasis is placed on the structure and operation of intersectoral partnerships to achieve public goals.

#### PAS 497. Independent Study in Public Service. 3 Credits.

3 credits. Provides students the opportunity to undertake independent study of selected topics/issues in public service under the guidance of a faculty member. Student and faculty member must complete and agree on a learning contract before study begins. Pass/Fail grading only.

## PE - Physical Education

### PHYSICAL EDUCATION Courses

#### PE 101+. Swim Conditioning. 1 Credit.

Students will discuss and learn the training process including advantages and benefits of swimming, principles of training, training procedures, evaluation and motivation, and minor annoyances. Stroke mechanics and improvement and information for triathletes.

#### PE 102+. Beginning Swimming. 1 Credit.

Development of the basic water safety skills and knowledge to make one reasonably safe in the water.

#### PE 103+. Intermediate Swimming. 1 Credit.

Instruction in all strokes will be covered. Prerequisites: must be comfortable in deep water.

#### PE 104+. Lifeguard Training. 2 Credits.

Development of the skills and knowledge designed to save the life of another in the event of an emergency in the water. Red Cross certification.

#### PE 105+. Water Safety Instruction. 3 Credits.

This course is designed to provide the student with knowledge and skills in water safety and teaching techniques for certification to teach swimming, lifesaving, rescue and water safety courses. Red Cross Water Safety Instructor Certificate upon successful completion. Prerequisites: must be at least 17, in sound physical condition, and have the ability to perform skills in the level VI ARC swim course.

#### PE 107+. Beginning SCUBA. 1 Credit.

Three classes per week; 7 1/2 weeks; 1 credit. Development of the basic skills and knowledges of skin and SCUBA diving. NAUI certification issued upon completion of PE 107+ and 108+. Students must furnish their own equipment and pay for air used.

#### PE 108+. Intermediate SCUBA. 1 Credit.

Development of intermediate SCUBA skills. NAUI certification issued upon completion of the course. Several open-water dives are required. Students must furnish their own equipment and pay for air used. Prerequisites: completion of any beginning SCUBA course.

**PE 112+. Yoga. 2 Credits.**

This course provides a foundation for the understanding and practice of Hatha yoga in its complete form. Course covers yoga postures, breathing exercises, philosophy, and meditation.

**PE 113+. SCUBA Assistant Instruction. 2 Credits.**

This course is the initial leadership-level certification for scuba divers. The course is designed to prepare individuals to pass the tests in fundamental water skills and basic diving instruction necessary to authorize them to assist scuba instructors in the conduct of diving training. Prerequisites: certification as an advanced scuba diver or documented equivalent experience.

**PE 114+. Beginning Sailing. 1 Credit.**

Development of basic seamanship and sailing techniques. Additional fees are required. Swimming competency required.

**PE 117+. Disabled and Fit. 1-2 Credits.**

Developed for students with a physical disability who wish to participate in an individually designed fitness program.

**PE 118+. Weight Training. 1 Credit.**

Designed to allow students an individualized weight training program. The program will include use of free weights, universal, and other appropriate tools for the variety of weight training differences.

**PE 124+. Intermediate Badminton. 1 Credit.**

Development of all the strokes to enable an individual to play a good game of badminton. Emphasis is placed on the strategy of the game of singles and doubles.

**PE 125+. Beginning Tennis. 1 Credit.**

Development of sufficient skills in the basic strokes and knowledge to give the individual an enjoyment of the game. The student is responsible for furnishing one can of new and approved USTA balls.

**PE 126+. Intermediate Tennis. 1 Credit.**

Development of strokes to enable an individual to play a good game of tennis. Emphasis is placed on the strategy of the game of singles and doubles. The student is responsible for furnishing one can of new and approved USTA balls.

**PE 134+. Beginning Golf. 1 Credit.**

The fundamentals of golf, stance, grip, swing, rules, and etiquette are presented. Driving range and golf course may be used. Students pay all fees.

**PE 139+. Volleyball. 1 Credit.**

Development of fundamental skills of soccer. Rules and strategies are stressed.

**PE 167+. Beginning Judo. 1 Credit.**

An introduction to Judo including the techniques of throws, holdings, lockings, and pinnings. Philosophy and cultural aspects of Sport Judo are also covered.

**PE 168+. Intermediate Judo. 1 Credit.**

An intermediate course in Sport Judo covering intermediate skills and strategies.

**PE 171+. Physical Conditioning. 1 Credit.**

This course addresses the basic principles of progressive weight training. Objectives of the course include knowledge of various weight-training systems, proper use of weight-training equipment, and effective record-keeping to monitor individual progress.

**PE 174+. Aerobics I. 2 Credits.**

This course is designed to introduce the student to a complete physical fitness program that strengthens the heart and lungs, and tones up the muscles.

**PE 175+. Zumba. 1 Credit.**

Zumba is a Latin inspired, dance-fitness class that incorporates Latin and International music with dance movements. It is a high calorie-burning fitness class that features fast and slow rhythms. The student will participate in instructor led routines. This class will include discussion of Zumba's history and basic four rhythms. No dance experience necessary.

**PE 180+. Beginning Aikido. 1 Credit.**

Course is designed to introduce the fundamental dynamics of Aikido principle. It contains the fundamental skills in body dynamics, body movements, safety landing, defensive pattern drills, and overall understanding of Aikido as a classical art form. Course provide comprehensive information on the philosophical and aesthetic aspects of Aikido.

**PE 181+. Kobudo. 1 Credit.**

This course is designed to introduce the fundamentals of classical weaponry arts in Bo (long oak stick), Kama (sickle), Jo (short oak stick), Sai (speared iron sword), and Bokuto (wooden sword).

**PE 182+. Kendo. 1 Credit.**

This course is designed to introduce the fundamental Japanese classical swordsmanship in skill components as well as its philosophical foundation. Bokuto (wooden sword), Shinai (bamboo sword) and a full armor are used for the skill training.

**PE 184+. Intermediate Aikido. 1 Credit.**

Course is designed to introduce the intermediate level of Aikido dynamics. It contains the basics of fundamental skills in body dynamics, body movements, safety landing, intermediate level of defensive pattern drills, and overall understanding of Aikido as a classical art form. Prerequisites: PE 180+.

**PE 185+. Advanced Aikido. 1 Credit.**

Course is designed to introduce the advanced level of Aikido dynamics. It contains training in advanced skills in body dynamics, body movements, defensive pattern drills, and overall understanding of Aikido theory and application as a classical art form. Prerequisites: PE 184+.

**PE 186+. Beginning Karate. 1 Credit.**

This course is designed to give the traditional Karate training ('Art of Empty Hand') to the beginning student. It emphasizes the traditional mode of training with mental and physical discipline. Formal Kata, defensive skills, punches, kicks, and blocking techniques are introduced.

**PE 187+. Intermediate Karate. 1 Credit.**

This course is designed to give the student further instruction and practice in traditional Karate. Prerequisites: PE 186+.

**PE 188+. Beginning Self-Defense. 1 Credit.**

The student is introduced to the various practical skills and methods of self-defense. Judo, Aikido, Jujutsu, and Karate are combined to explore the most effective means to defend oneself.

**PE 189+. Intermediate Self-Defense. 1 Credit.**

This course is designed to give the student further instruction and practice in the various practical skills and methods of self-defense. Prerequisites: PE 188+.

**PE 190+. Advanced Karate. 1 Credit.**

This course is designed to introduce further instruction and practice in traditional martial art aspects of Karate-doh. Philosophical understanding and high level of skill proficiency are emphasized. Prerequisites: PE 187+.

**PE 191+. IAIDO (Art of Sword Harmony). 1 Credit.**

This course is designed to introduce the classical art form of sword drawing skills and its philosophic principle. This course focuses on the skills dynamics of traditional and ceremonial art forms. Prerequisites: PE 182+, PE 180+ or PE 186+, PE 184+. Pre- or corequisite: PE 185+.

**PE 194+. Intermediate Kendo. 1 Credit.**

This course is designed to provide the intermediate level of Kendo skills beyond a basic skill level. The course emphasizes the correct mental attitude and physical discipline. Prerequisites: PE 182+ or equivalent proficiency.

**PE 195+. Theory of Advanced Aikido. 1 Credit.**

This course is designed to provide the theoretical framework of Aikido that embodies the mental and physical dynamics of the martial arts discipline of Aikido. Prerequisites: PE 180+, PE 184+, PE 185+ or equivalent proficiency level.

**PE 196+. Topics in Health and Physical Education. 1-3 Credits.**

A variety of new and innovative courses in lifetime physical activities are offered such as advanced theory class in martial arts, advanced Iaido, self defense seminar, yoga, cross country skiing, yacht racing, racquetball, nautilus, swim conditioning, water safety instructor, scuba and aerobic dance.

**PE 197+. Theory of Advanced Karatedo. 1 Credit.**

This course is designed to provide the theoretical framework of Karatedo that embodies the higher principle of physical and mental dynamics and aims to achieve the advanced skills in Karatedo. Prerequisites: PE 186+, PE 187+, PE 190+ and/or equivalent proficiency level.

**PE 198+. Intermediate Self-Defense. 1 Credit.**

This course is designed to provide the intermediate level of self-defense skills beyond the basic skill. The course stresses both the application of basic techniques and proper physical and mental discipline. Prerequisites: PE 188+ or equivalent skills.

**PE 200. Foundations of Education, Physical Education and Health. 3 Credits.**

This is an introductory course for physical education majors that includes principles, philosophy, and history of education, physical education and health. Current issues and practices will be presented. The professional teaching portfolio is introduced.

**PE 217. Fundamental Movement Skills and Dance. 2 Credits.**

This course is designed to introduce the fundamental components of dance and rhythms. Techniques in rhythmic movements and basic fundamental skills of folk dance, square dance, and contemporary dance; stresses dance positions for motions and sequencing of movements. Through participation, individuals will develop skills in a variety of dance styles and build a range of rhythmic activities to be taught in the physical education classroom.

**PE 218. Aquatics and Outdoor Education. 2 Credits.**

This course introduces the principles and practices of swimming and outdoor education for the school setting. Activities will include orienteering, team building, cooperative games, and aquatics. Effective instructional strategies, basic skills, and assessment for the teaching of these physical activities will be included. Prerequisites: PE 102+ will be required for any student who is unable to swim in deep water.

**PE 220. Teaching of Team Sports I. 2 Credits.**

This course will introduce the sports of soccer, flag football, field hockey, speedball, team handball, and ultimate frisbee. Effective instructional strategies, game tactics, and assessment techniques for the teaching of these team sports will be included.

**PE 221. Teaching of Team Sports II. 2 Credits.**

This course will introduce the sports of basketball, volleyball, and softball. Effective instructional strategies, game tactics, and assessment techniques for the teaching of these team sports will be included.

**PE 222. Teaching of Individual Sports. 2 Credits.**

This course will introduce a variety of individual and dual sports for the enhancement of life-span involvement in physical activity. Instructional strategies, game tactics, and assessment techniques for the teaching of these individual and dual sports will be included.

**PE 224. Teaching Elementary Physical Education. 3 Credits.**

Designed for the preparation in teaching all elementary age children developmentally appropriate physical activities in educational games, educational gymnastics and motor skill development. Skill proficiency levels, learning styles, and effective assessment are studied through a conceptual-skills theme approach.

**PE 226+. Advanced SCUBA. 2 Credits.**

NAUI Advanced Diver certification issued. Development of advanced SCUBA skills. Open water training with the emphasis on leadership training necessary for assisting the instruction of group dives. Students must furnish their own equipment and air. Prerequisites: PE 107+ and PE 108+ or permission of the instructor.

**PE 295. Topics in Physical Education. 1-3 Credits.**

This course provides an opportunity for in-depth study of selected topics in physical education. Prerequisites: sophomore standing and approval of program advisor.

**PE 300. Management Skills for Teaching Health and Physical Education. 3 Credits.**

Foundations in psychological, sociological, and academic needs of students, with specific focus on management skills in open classroom and sport settings. Specialized safety concerns and environmental considerations are also addressed. Lesson planning, goal setting, and movement formations unique to HPER activities are included. Prerequisites: passing scores on Praxis I and junior standing.

**PE 301W. Teaching Physical Education in the Secondary Schools. 3 Credits.**

Acquaints the students with current theories, principles, styles and best practices utilized in teaching physical education to students at the secondary school level. (This is a writing intensive course.) Prerequisites: junior standing and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**PE 308. Driver Education Foundations of Traffic Safety. 3 Credits.**

The intent of the course is to develop a thorough understanding of the highway transportation systems, the complexity of the driving task, and factors contributing to performance of highway users (e.g. attitudes and skills) necessary to develop competent drivers for prospective teachers to have the essential knowledge and skills to effectively deliver course content as an endorsed driver education trainer. Prerequisites: permission of the instructor.

**PE 309. Principles and Methodologies of Classroom and In-Car Instruction. 3 Credits.**

This course provides teacher candidates with an overview of teaching methods and effective practices for driver education instruction with a focus on teaching skills. An emphasis is placed on program organization, administration, classroom instruction, single car instruction, multiple-car range instruction, simulation and evaluation. A minimum of 20 hours behind-the-wheel supervised teaching experiences. Prerequisites: PE 308.

**PE 318. Motor Learning. 3 Credits.**

Designed to provide the student with experiences in the practical application of theory related to motor learning. Feedback, transfer learning, practice, and motor control principles and concepts are addressed. Prerequisites: junior standing.

**PE 319. Physical Growth and Motor Development. 3 Credits.**

An examination of the physical growth and motor development of the human being over the life span. Emphasis is on the assessment of physical and cognitive development, particularly in the K-13 ages. Theory and technique for research are discussed and the use of research findings is incorporated into the assessment materials. Attention is directed toward acquisition of basic skills, perceptual-motor development, and age-related changes. Prerequisites: junior standing.

**PE 368. Coaching Internship. 6 Credits.**

Final field placement required for all students with an emphasis in a coaching minor. Students will be placed in an athletic coaching environment to gain experience in personal communication, technique instruction, practice organization and administrative duties required of the specific sport of their emphasis. Placement of internship subject to instructor approval. Minimum of 200 clock hours (hours to be arranged). Prerequisites: Senior standing; PE 409, PE 415, PE 456.

**PE 404/504. Adapted Physical Education. 4 Credits.**

Students will be acquainted with and research the different disabilities, learning modes of the exceptional child, IDEA-the law that advocates free and appropriate education, and working with the child with disabilities within an ecosystem. A vital component of the course will be the practical application of theory. Prerequisites: PE 300 and PE 319.

**PE 409/509. Physiology of Exercise. 3 Credits.**

An investigation into the physiological adjustments of the human organism to exercise including systematic as well as biochemical molecular changes. Major areas of concern include neuromuscular, metabolic, and cardiorespiratory changes during exercise and the influence of such variables as nutrition, drugs, environment, age, sex, training and body weight.

Prerequisites: BIOL 250.

**PE 415. Principles of Coaching Management. 3 Credits.**

This course is designed to provide students with a basic knowledge of the coaching profession. Special emphasis will be placed on establishing a sound coaching philosophy, selecting a coaching style, desirable qualities of a coach, ethics and the coach, roles of the head coach, planning and organizing for games and practices, coaching pedagogy, off-season planning, final preparations for the season, and issues and problems related to coaching and recruiting athletes. Prerequisites: junior standing.

**PE 419. SCUBA Instructor. 3 Credits.**

NAUI instructor certification issued. Practice teaching of beginning SCUBA class required. Students must furnish their own equipment and air. Prerequisites: NAUI assistant instructor or equivalent; one year and 24 hours of open water time after basic SCUBA course certification, and permission of the instructor.

**PE 456. Sports Psychology. 3 Credits.**

Study of the psychological bases of coaching strategies and methodologies. Emphasis is placed on applying knowledge in field settings. Prerequisites: Junior standing.

**PE 497/597. Topics in Health and Physical Education. 1-3 Credits.**

This course provides an opportunity for in-depth study of selected topics in health and physical education. Prerequisites: junior standing and approval of program advisor.

## PHIL - Philosophy

### PHILOSOPHY Courses

**PHIL 110P. Introduction to Philosophy. 3 Credits.**

An introduction to basic concepts, methods and issues in philosophy, and a consideration of representative types of philosophical thought concerning human nature, the world, knowledge, and value.

**PHIL 120P. Logic and Philosophy. 3 Credits.**

A study of the principles of correct reasoning and the types of fallacious reasoning. Includes an examination of the philosophical and historical context of logic, and the application of logical methods to philosophical questions.

**PHIL 126P. Honors: Introduction to Philosophy. 3 Credits.**

Open only to students in the Honors College. A special honors section of PHIL 110P.

**PHIL 127P. Honors: Introduction to Philosophy of Science. 3 Credits.**

Open only to students in the Honors College. Scientific developments are used as an occasion for philosophical reflection. In the process the student is led to a better understanding of science. The course introduces and makes use of basic logical and conceptual tools of philosophy.

**PHIL 140P. Introduction to Philosophy of Science. 3 Credits.**

Scientific developments are used as an occasion for philosophical reflection. In the process the student is led to a better understanding of science. The course introduces and makes use of basic logical and conceptual tools of philosophy.

**PHIL 227E. Honors: World Religions: Beliefs and Values. 3 Credits.**

Open only to students in the Honors College. A special Honors section of PHIL 250E.

**PHIL 228E. Honors: Introduction to Ethics. 3 Credits.**

Open only to students in the Honors College. A special Honors section of PHIL 230E.

**PHIL 230E. Introduction to Ethics. 3 Credits.**

An introduction to the study of ethics through philosophical reflection on a variety of moral issues of contemporary significance. Topics covered will vary by semester and instructor, and may include issues drawn from professional fields such as business, medicine, and information technology, plus matters of public concern like the environment, the treatment of animals, the use of military force, social justice, and civil and human rights.

**PHIL 250E. World Religions: Beliefs and Values. 3 Credits.**

A comparative and philosophical study of major world religions in the Eastern and Western traditions with particular attention being paid to their views about the basis of right action and the nature of good and evil. Other points of comparison include the foundations of religious knowledge and belief, the meaning of human life, divinity, and death and immortality. A student with credit for PHIL 150P cannot receive credit for PHIL 250E.

**PHIL 290G. Philosophy of Digital Culture. 3 Credits.**

This course provides practical training in information access, critical information assessment, and ethical information use in a theoretically-oriented research context, as well as a theoretical exploration of issues in information literacy, the ethics and politics of online informational spaces, and the philosophy of digital culture.

**PHIL 303E. Business Ethics. 3 Credits.**

A philosophical examination of ethical issues that arise in business and commerce. Topics discussed will vary by semester and instructor, but may include affirmative action, ethical versus unethical sales and marketing techniques, the obligations of business to society (if any), and the moral foundations of capitalism. Prerequisites: ENGL 110C.

**PHIL 304. Marx and the Marxists. 3 Credits.**

Learning how to understand Marxism, yesterday and today, through readings, applications, exercises for discussion and projects. Prerequisites: Junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 305. American Philosophy. 3 Credits.**

An examination of the writings of some of the major American philosophers such as Peirce, James, Royce, Dewey, and Whitehead. Prerequisites: Junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 313. Philosophy of Religion. 3 Credits.**

An analytical and critical consideration of the philosophical foundations of religion. Such topics as the existence of God, the problem of evil, theism and atheism, prayer, and immortality are discussed. Prerequisites: Junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 314. Studies in Western Religious Thought. 3 Credits.**

Various topics exploring religious, philosophical, and cultural themes in the traditions of Judaism, Christianity, or Islam. Prerequisites: Three semester hours in philosophy, or permission of the instructor.

**PHIL 324. Philosophy of Art. 3 Credits.**

A study of the various theories of art and human creativity in the context of historical and cultural backgrounds. Prerequisites: Junior standing and three semester hours in philosophy or permission of the instructor.

**PHIL 330W. Ancient Philosophy. 3 Credits.**

A study of the thought of the classical Greek and Roman philosophers from the sixth century B.C. to the fifth century A.D. (This is a writing intensive course.) Prerequisites: Junior standing, a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, and three semester hours in philosophy or permission of the instructor.

**PHIL 331. Modern Philosophy. 3 Credits.**

A study of the thought of the major Western philosophers through the eighteenth century, including the empirical tradition of Bacon, Locke, Berkeley, and Hume, the rationalistic tradition of Descartes, Spinoza, and Leibniz, and the critical philosophy of Kant. Prerequisites: Junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 332. Medieval Philosophy. 3 Credits.**

This course examines the significant contributions of medieval philosophers to the development of philosophy of religion as well as other fields, including philosophy of language, logic, and ethics. Students examine the writings of medieval philosophers from Jewish, Christian, and Islamic traditions. Prerequisites: ENGL 110C.

**PHIL 340. Logic I. 3 Credits.**

A study of the basic concepts and methods of logic as they occur in ordinary language, formal logical arguments, and an elementary logical system. Traditional Logic is emphasized, but some elements of Modern Logic are also introduced. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 344E. Environmental Ethics. 3 Credits.**

An examination of the nature and basis of human obligations for the welfare of the environment with special attention to the foundations of ethical decision making. Prerequisites: Junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 345E. Bioethics. 3 Credits.**

An examination of the philosophical foundations of ethical decision making in biology, medicine, and the life sciences. Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**PHIL 353. Asian Religions. 3 Credits.**

A study of religious and philosophical traditions of India, China and Japan. Primary emphasis will be given to Hinduism, Buddhism, Confucianism and Taoism. Prerequisites: Junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 354. Comparative Philosophy East and West - Personhood. 3 Credits.**

An examination of the philosophical theme "personhood" in Eastern and Western traditions. The course includes a methodology for comparative analysis, a dialogue on key issues and their application to contemporary topics from historical and contemporary religious, psychological and gender perspectives. The class samples well known positions in the Eastern and Western traditions as well as social and political contexts for the various conceptions. Prerequisites: PHIL 110P or PHIL 120P or PHIL 140P or PHIL 230E or PHIL 250E or permission of the instructor.

**PHIL 355. Computer Ethics. 3 Credits.**

An examination of ethical issues created, aggravated or transformed by computer technology. Theory-grounded paradigms of ethical decision making are presented with application to realistic cases. Principal topics: computer crime, privacy, cyberspace, and business applications. Prerequisites: Junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 369. Practicum. 3 Credits.**

The course offers three forms of practical experience for philosophy majors: Professional (for students anticipating careers in relevant professions, including philosophy); Classroom (for students anticipating graduate study and a teaching career); Civic/Social Affairs (for students interested in grassroots activism). Consult the department for details and certain specific prerequisites. (qualifies as a CAP experience) Prerequisites: junior standing; minimum of 15 credit hours in philosophy.

**PHIL 383T. Technology: Its Nature and Significance. 3 Credits.**

A philosophical examination of technology with special attention to its relationship with and mutual dependence upon society, culture, and human values. Historical developments and specific technologies are also covered. Prerequisites: ENGL 110C.

**PHIL 395. Topics in Philosophy. 3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisites: Junior standing or approval of the department chair.

**PHIL 396. Topics in Philosophy. 3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisites: Junior standing or approval of the department chair.

**PHIL 402/502. Gender and Philosophy. 3 Credits.**

A philosophical survey of approaches to understanding gender and gender differences. The course will also serve as an introduction to feminist philosophy, with a particular emphasis on feminist ethics. Prerequisites: Junior standing and a grade of C or better in ENGL 110C and ENGL 211C, ENGL 221C, or ENGL 231C.

**PHIL 404/504. Twentieth Century Continental Philosophy. 3 Credits.**

A study of influential contemporary movements in European philosophy. Emphasis will be given to the writings of Husserl, Heidegger, Sartre, Gadamer, Derrida, and Foucault. Prerequisites: Junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 406/506. Contemporary Analytic Philosophy. 3 Credits.**

A study of the twentieth-century analytic tradition, including such thinkers as Moore, Russell, Wittgenstein, Ayer, Carnap, Ryle, Wisdom, and Austin. Prerequisites: Junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 410/510. Social and Political Philosophy. 3 Credits.**

A philosophical analysis of the relation between man, society, and the state, studying about a dozen philosophers since Plato on such topics as justice, authority, law, freedom, and civil rights. Prerequisites: Junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 411/511. Postmodernism and Political Philosophy. 3 Credits.**

An examination of intellectual currents in postmodernism as they pertain to central questions in social and political thought. The course covers the roots of modernism in the Enlightenment and various challenges to modernism in 19th and 20th century thought. Particular attention is given to the prospects for democracy in postmodern thinking. Prerequisites: Three semester hours in philosophy and junior standing or permission of the instructor.

**PHIL 412/512. Philosophy of Law. 3 Credits.**

An examination of the nature of law and philosophical issues concerning the law. Prerequisites: Junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 417/517. Philosophy and Educational Issues. 3 Credits.**

Considers the relationship of philosophy and education. Topics considered include: philosophy as a foundation for education, education as an institution, and educational and philosophical issues as they relate to each other. Prerequisites: Junior standing and one introductory philosophy course or a course in principles of education.

**PHIL 423/523. Philosophy of Work. 3 Credits.**

An examination of philosophical issues surrounding the practice of work. Topics to be discussed may include the definition of work, alienation, exploitation, whether there is a right to work or a right not to work, religious perspectives on work, and gender issues in work. Prerequisites: Junior standing or permission of instructor.

**PHIL 427/527. Myth and Philosophy. 3 Credits.**

A study of the nature of myth, its role and importance in human thought. The analysis will stress the relationships between mythology, religion, literature, drama, and philosophy in ancient Greece. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 431/531. Nineteenth-Century Philosophy. 3 Credits.**

A study of significant intellectual innovations and revolutions in nineteenth century European thought that helped shape the modern mind. Emphasis will be given to the writings of Kant, Schopenhauer, Hegel, Marx, Kierkegaard and Nietzsche. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 434/534. Contemporary Theory of Knowledge. 3 Credits.**

This course provides students with a problem-oriented, critical, and comparative understanding of problems in contemporary epistemology. Topics include skepticism and responses thereto, analyses of knowledge, the externalist versus internalist debate, foundationalism and coherentism, and social approaches to knowledge including contextualism and feminism. Prerequisites: Junior standing or permission of instructor.

**PHIL 435/535. Philosophy of Psychology. 3 Credits.**

An examination of various ways in which the mind has been understood in philosophy and in psychology and of the methods that have been used in the study of the mind. Prerequisites: Junior standing or permission of instructor.

**PHIL 440/540. Philosophy of Natural Sciences. 3 Credits.**

A study of the concepts and philosophical problems common to the natural sciences: scientific reasoning, confirmation, explanation, laws, meaning, theories, revolutions, progress, and values. Prerequisites: junior standing, three semester hours in philosophy and eight semester hours of laboratory science.

**PHIL 441/541. Foundations of Ethics. 3 Credits.**

An examination of the philosophical foundations of ethical inquiry. Various ethical systems are considered, and different views of metaethics and moral psychology may be as well. Prerequisites: Grade of C or better in ENGL 211C, ENGL 221C or ENGL 231C and junior standing.

**PHIL 442E/542. Studies in Applied Ethics. 3 Credits.**

An intensive examination of ethical issues in a particular field or profession; an emphasis on ethical theory underlying practical decisions. Prerequisites: ENGL 110C and Junior standing.

**PHIL 480/580. Hinduism. 3 Credits.**

An intensive study of the basic teachings of Hinduism as manifested in its sacred writings. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 481/581. Buddhism. 3 Credits.**

A study of the origin, historical development, and contemporary status of Buddhism, in terms of its religious and philosophical elements and its influence in Asian cultures. Prerequisites: Junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 482/582. Chinese Religion and Philosophy. 3 Credits.**

A study of Chinese thought emphasizing Early and Classical Confucianism and Taoism, Chinese Buddhism, and NeoConfucianism. Modern currents of Chinese thought is also discussed. Prerequisites: Junior standing and three semester hours in philosophy, or permission of the instructor.

**PHIL 485/585. Japanese Religion and Philosophy. 3 Credits.**

A study of the religious and philosophical traditions of Japan. Emphasis will be given to Shintoism, Buddhism, and Neo-Confucianism and their contemporary status and influence in Japanese culture. Prerequisites: junior standing and three semester hours in philosophy or permission of the instructor.

**PHIL 491/591. Seminar in Philosophy. 3 Credits.**

Intensive examination of the thought of one major philosopher. Prerequisites: junior standing and six semester hours in philosophy, or permission of the instructor.

**PHIL 492/592. Seminar in Philosophy. 3 Credits.**

Intensive examination of the thought of one major philosopher. Prerequisites: junior standing and six semester hours in philosophy, or permission of the instructor.

**PHIL 493/593. Seminar in Philosophy. 3 Credits.**

Intensive examination of the thought of one major philosopher. Prerequisites: junior standing and six semester hours in philosophy, or permission of the instructor.

**PHIL 494/594. Seminar in Philosophy. 3 Credits.**

Intensive examination of the thought of one major philosopher. Prerequisites: junior standing and six semester hours in philosophy, or permission of the instructor.

**PHIL 495/595. Topics in Philosophy. 1-3 Credits.**

The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisites: appropriate survey course or permission of the instructor.

**PHIL 496/596. Topics in Philosophy. 1-3 Credits.**

The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisites: appropriate survey course or permission of the instructor.

**PHIL 497/597. Tutorial Work in Special Topics in Philosophy. 1-3 Credits.**

Independent reading and study of a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: senior standing and approval of the department chair.

**PHIL 498/598. Tutorial Work in Special Topics in Philosophy. 1-3 Credits.**

Independent reading and study of a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: senior standing and approval of the department chair.

## PHYS - Physics

### PHYSICS Courses

**PHYS 101N. Conceptual Physics. 4 Credits.**

An introductory descriptive course which develops and illustrates the concepts of physics in terms of phenomena encountered in daily life. Topics include mechanics, electricity and magnetism. (offered fall, summer).

**PHYS 102N. Conceptual Physics. 4 Credits.**

An introductory descriptive course which develops and illustrates the concepts of physics in terms of phenomena encountered in daily life. Topics include sound, light, fluids and heat. (offered spring) Prerequisites: PHYS 101N.

**PHYS 103N. Introductory Astronomy. 4 Credits.**

A study of the physical principles and scientific investigation of objects in our solar system. Emphasis on how we acquire knowledge of celestial objects to develop models of our universe.

**PHYS 104N. Introductory Astronomy. 4 Credits.**

Emphasizes the study of stars, star systems, cosmology and relativity. Emphasis on how we acquire knowledge of celestial objects to develop models of our universe.

**PHYS 109. Introductory Astronomy Laboratory. 1 Credit.**

Laboratory 2 hours; 1 credit. Prerequisite: written permission of the chief departmental advisor of the Physics Department. An introductory laboratory course in astronomy dealing with experiments about the laws of nature that apply to objects in our solar system.

**PHYS 111N. Introductory General Physics. 4 Credits.**

Emphasizes mechanics, wave motion and heat and will also cover the needed elements of trigonometry and vectors. Students receiving credit for PHYS 111N cannot receive credit for PHYS 102N either simultaneously or subsequently. (offered fall, spring, summer) Prerequisite: MATH 102M or MATH 103M or MATH 162M or MATH 166.

**PHYS 112N. Introductory General Physics. 4 Credits.**

Emphasizes electricity, light, and introduction to modern physics. Prerequisites: PHYS 111N and MATH 102M (or MATH 103M) or MATH 162M or MATH 166. (offered fall, spring, summer).

**PHYS 113. Physics Laboratory. 1 Credit.**

Prerequisites: written permission of the chief departmental advisor of the Physics Department. Available for pass/fail grading only. An introductory laboratory covering experiments from mechanics, wave motion, heat and sound.

**PHYS 114. Physics Laboratory. 1 Credit.**

Prerequisites: written permission of the chief departmental advisor of the Physics Department. Available for pass/fail grading only. An introductory laboratory covering experiments from electricity, magnetism, and optics.

**PHYS 120. Physics in the 21st Century. 1 Credit.**

Lecture 1 hour; 1 credit. This seminar will provide students with a broad introduction to the cutting edge of physics research and its applications in diverse areas of contemporary physics. Recommended for incoming students interested in physics and the natural sciences.

**PHYS 126N. Honors: Introductory Astronomy. 4 Credits.**

Lecture 3 hours; laboratory 2 hours; 4 credits. Open only to students in the Honors College. A special honors version of PHYS 103N.

**PHYS 127N. Honors: Introductory Astronomy. 4 Credits.**

Lecture 3 hours; laboratory 2 hours; 4 credits. Open only to students in the Honors College. A special honors version of PHYS 104N.

**PHYS 226N. Honors: University Physics. 4 Credits.**

Lecture 3 hours; laboratory 2 hours; 4 credits. Open only to students in the Honors College. A special honors version of PHYS 231N.

**PHYS 227N. Honors: University Physics. 4 Credits.**

Open only to students in the Honors College. A special honors version of PHYS 232N. Prerequisites: PHYS 231N or PHYS 226N with a grade of C or better, and MATH 211. Pre- or corequisites: MATH 212 or permission of instructor.

**PHYS 231N. University Physics. 4 Credits.**

A general introduction to physics in which the principles of classical and modern physics are applied to the solution of physical problems. The reasoning through which solutions are obtained is stressed. Topics include mechanics, fluids, and thermodynamics. This course is designed for majors in the physical sciences, engineering, mathematics, and computational sciences. Students receiving credit for PHYS 231N and PHYS 232N cannot simultaneously or subsequently receive credit for PHYS 101N and PHYS 102N or PHYS 111N and PHYS 112N. (offered fall, spring, summer) Prerequisites: MATH 211 with a grade of C or better. Pre- or corequisites: MATH 212 or permission of instructor.

**PHYS 232N. University Physics. 4 Credits.**

A general introduction to physics in which the principles of classical and modern physics are applied to the solution of physical problems. The reasoning through which solutions are obtained is stressed. This course is designed for majors in the physical sciences, engineering, mathematics, and computational sciences. Topics include electricity and magnetism, and optics. Students receiving credit for PHYS 231N and PHYS 232N cannot simultaneously or subsequently receive credit for PHYS 101N and PHYS 102N or PHYS 111N and PHYS 112N. (offered fall, spring, summer) Prerequisites: PHYS 231N or PHYS 226N with a grade of C or better, and MATH 211. Pre- or corequisite: MATH 212 or permission of instructor.

**PHYS 303. Intermediate Experimental Physics. 3 Credits.**

A laboratory-oriented course designed to provide students with a broad introduction to instrumentation and techniques used in modern physics laboratories. Topics to be covered include: basic electronics with an introduction to diode, transistor and op-amp circuitry, and an introduction to physical computing using LabView and Arduino micro controllers. Prerequisites: PHYS 232N.

**PHYS 304. Intermediate Experimental Physics. 3 Credits.**

Laboratory 6 hours; 3 credits each semester. Prerequisite: PHYS 232N and PHYS 303. A laboratory oriented course designed to provide students with a broad introduction to instrumentation and techniques used in modern physics laboratories. This course is a continuation of PHYS 303.

**PHYS 309. Physics on the Back of an Envelope. 1 Credit.**

Lecture 1 hour; 1 credit. Corequisite: PHYS 102N, PHYS 112N or PHYS 232N. Physicists should be able to estimate the order-of-magnitude of anything. How many atoms of Julius Caesar do you eat every day? How much waste does a nuclear power plant generate? Will develop concepts, relations and numbers useful for estimation. Will cover little new material, emphasizing already acquired knowledge. Will help students apply physics to real-life questions and understand which physical effects are appropriate on which scales. Seminar course.

**PHYS 311. Color in Nature and Art. 3 Credits.**

Explores the relationship between light as stimulus and color perceived by us. Develops underlying concept of technology of art and applied art. Describes basis for optical phenomena involved in many facets of daily life. Topics include: the interaction of light and the visual perception it produces; the basic concept of spectra; wave, ray, and quantum optics; polarized light; photography; paintings; pigments; rainbows and mirages; color theory systems; formation of images; optical instruments. There is no physics prerequisite for this course. Prerequisite: MATH 102M (or MATH 103M).

**PHYS 313. Elements of Astrophysics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: PHYS 232N. A one-semester course covering the important topics of modern astrophysics. The physical basis of stellar evolution and chemical element formation is derived from first principles. Observational details of white dwarfs, neutron stars, pulsars, and black holes are developed.

**PHYS 319. Analytical Mechanics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: PHYS 232N. Corequisite: MATH 307. Fundamentals of Newtonian mechanics. Topics include kinematics, dynamics, energy and momentum, central forces and planetary motion, and resonance phenomena.

**PHYS 323. Modern Physics. 3 Credits.**

Lecture 3 hours; 3 credits. Corequisite: MATH 212. Prerequisite: PHYS 232N. Introduction to the wave nature of matter, with applications in materials science, atomic, and nuclear physics. Introduction to relativity, including applications in mechanics and electrodynamics.

**PHYS 332. Physics of Music and Musical Reproduction. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: MATH 102M. This course explores the topics of: the nature of sound, vibrations, resonance, the human ear, loudness, pitch, timbre, musical scales, dissonance and consonance, musical instruments, sound recording and reproduction, electronic music, noise, and acoustics.

**PHYS 350. Light and Lasers. 3 Credits.**

Lecture and demonstrations 3 hours; 3 credits. Prerequisite: PHYS 102N or PHYS 112N or PHYS 232N. An analysis of those concepts of geometrical physical optics needed for the understanding of laser resonators, optical propagation, and radiation detection. A study of laser diodes, molecular, neutral and ion gas lasers, tuneable dye and excimer lasers. Laser applications in medicine, communications, information processing, holography, pollution detection, and material testing and fabrication are stressed.

**PHYS 355. Mathematical Methods of Physics. 3 Credits.**

Lecture 3 hours, 3 credits. Prerequisites: PHYS 232N and MATH 212. This course will provide a strong foundation in the mathematical methods and applications necessary for undergraduate study of physics beyond the introductory level.

**PHYS 367. Cooperative Education. 1-3 Credits.**

1-3 credits each semester (may be repeated for credit). Prerequisite: approval of the chief departmental advisor and Career Management in accordance with the policy for granting credit for Cooperative Education programs. Available for pass/fail grading only. Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place. (qualifies as a CAP experience).

**PHYS 368. Internship. 1-3 Credits.**

1-3 credits. Prerequisite: approval by the chief departmental advisor and Career Management. Available for pass/fail grading only. Academic requirements will be established by the department and will vary with the amount of credit desired. Allows students to gain short duration career-related experience. (qualifies as a CAP experience).

**PHYS 406/506. Observational Astronomy. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. Observational techniques in astronomy with emphasis on constellation identification, celestial movements, and telescopic observation. Individualized night observations are required.

**PHYS 408/508. Astronomy for Teachers. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. A course in astronomy dealing with stars and stellar systems. Topics will include observational astronomy, the electromagnetic spectrum, relativity, stellar and galactic structures, cosmology, and the search for extraterrestrial intelligence.

**PHYS 411. Introduction to Atomic Physics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: PHYS 452 and MATH 307. The hydrogen atom, radiative transitions, two-electron systems, many-electron atoms, interaction with external fields, theory of atomic spectra.

**PHYS 413/513. Methods of Experimental Physics. 3 Credits.**

Laboratory 6 hours; 3 credits. Prerequisites: PHYS 303 and PHYS 323. Corequisite: CS 150. Experiments in classical and modern physics, designed to develop skills in the collection, analysis, and interpretation of experimental data.

**PHYS 415/515. Introduction to Nuclear and Particle Physics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: PHYS 452. Corequisite: MATH 307. An introduction to the structure of the atomic nucleus, natural and artificial radioactivity, nuclear decay processes and stability of nuclei, nuclear reactions, properties of nuclear forces, and nuclear models. Also, particle phenomenology, experimental techniques and the standard model. Topics include the spectra of leptons, mesons, and baryons; strong, weak, and electromagnetic interactions.

**PHYS 416/516. Introduction to Solid State Physics. 3 Credits.**

Introduction to solid state physics and materials science, with emphasis placed on the applications of each topic to experimental and analytical techniques. Topics include crystallography, thermal and vibrational properties of crystals and semiconductors, metals and the band theory of solids, superconductivity and the magnetic properties of materials. Prerequisites: PHYS 452 and MATH 307.

**PHYS 417/517. Introduction to Particle Accelerator Physics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: PHYS 319 or MAE 205, and PHYS 425 or ECE 323. Introduction to the historical development and applications of particle accelerators to the fields of nuclear physics, particle physics, material sciences, and medical therapy and the design and physics of particle accelerators. Aspects of linear accelerators, circular accelerators such as cyclotrons, betatrons, synchrotrons, and storage rings, and recirculated linacs are covered. Topics include linear and non-linear single particle motion in accelerators, collective effects and beam stability in particle accelerators, and the electromagnetic radiation emitted by relativistic particles in accelerators. Up to date descriptions of the most modern particle accelerators will be included, as well as applications such as fixed target nuclear physics arrangements, colliding beam accelerators for high energy physics research, advanced storage ring sources of X-Rays, advanced neutron sources, radiation and radioactive material sources, and cancer therapy devices.

**PHYS 420/520. Introductory Computational Physics. 3 Credits.**

Introduction of computational methods and visualization techniques for problem solving in physics. Prerequisites: PHYS 319, PHYS 323, CS 150, and MATH 212.

**PHYS 425/525. Electromagnetism I. 3 Credits.**

Lecture, 3 hours. 3 credits. Corequisite: MATH 312. Prerequisite: PHYS 232N and PHYS 355. A study of the classical theory and phenomena of electricity and magnetism. Topics include the calculation of electric and magnetic fields, magnetic and dielectric properties of matter, and an introduction to Maxwell's equations.

**PHYS 451/551. Theoretical Mechanics. 3 Credits.**

A mathematical study of the concepts of mechanics. Vector calculus methods are used. Topics include mechanics of a system of particles, Lagrangian mechanics, Hamilton's canonical equations, and motion of a rigid body. Prerequisites: PHYS 319, PHYS 355 and MATH 312.

**PHYS 452/552. Introduction to Quantum Mechanics. 3 Credits.**

Prerequisites: PHYS 319, PHYS 323, and PHYS 355. Introduction to the physical and mathematical structure of quantum theory, including the historical and experimental origins of the subject. The subject matter includes techniques for solving the Schrodinger equation in one, two, and three dimensions. Both coordinate and momentum space representations are used. The harmonic oscillator and the Hydrogen atom receive particular attention.

**PHYS 453/553. Electromagnetism II. 3 Credits.**

A course in electrodynamics developed from Maxwell's Equations. Topics include Maxwell's Equations, Conservation Laws, Electromagnetic Waves, Potentials and Fields, Radiation, and the interplay of electrodynamics and special relativity. Prerequisites: PHYS 425 or ECE 323 or PHYS 320 and MATH 312.

**PHYS 454/554. Thermal and Statistical Physics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: PHYS 319 and PHYS 323. A study of the fundamental concepts of thermodynamics, kinetic theory, and statistical mechanics. Topics include the thermodynamics of simple systems, kinetic theory of gases, statistical mechanics of gases and an introduction to quantum statistics.

**PHYS 456/556. Intermediate Quantum Mechanics. 3 Credits.**

This course follows directly from PHYS 452. It includes a more detailed study of simple systems, an introduction to abstract quantum mechanics and Dirac notation, and applications to operator methods. Particular attention is paid to electron spin, angular momentum theory, operator treatment of the harmonic oscillator, the Pauli exclusion principle, perturbation theory, and scattering. Prerequisites: PHYS 323 and PHYS 452 or permission of the instructor.

**PHYS 489W. Senior Thesis I. 1 Credit.**

1 credit. Prerequisite: permission of the instructor and a grade of C or better in ENGL 211C or 221C or 231C. Part one of a two-semester option for completing the Senior Thesis. PHYS 489W plus PHYS 490W is equivalent to PHYS 499W.

**PHYS 490W. Senior Thesis II. 2 Credits.**

2 credits. Prerequisite: PHYS 489W. Part two of a two-semester option for completing the Senior Thesis. PHYS 489W plus PHYS 490W is equivalent to PHYS 499W. (This is a writing intensive course.)

**PHYS 497/597. Special Problems and Research. 1-3 Credits.**

1-3 credits each semester. Prerequisite: senior standing or permission of the instructor. These courses afford the student an opportunity to pursue individual study and research.

**PHYS 499W. Senior Thesis. 3 Credits.**

3 credits. Prerequisite: grade of C or better in ENGL 211C or 221C or 231C and permission of the instructor. Each student will undertake a research experience under the supervision of a department faculty member. The experience can be of an experimental, theoretical, or calculational type. A final oral and written report are required. The research may be completed on campus or at one of the department affiliated research organizations. (offered fall, spring, summer) (This is a writing intensive course.)

## POLS - Political Science

### POLITICAL SCIENCE Courses

**POLS 100S. Introduction to International Politics. 3 Credits.**

This course provides a basic introduction to the study of international politics. It considers some of the more prominent theoretical perspectives in the discipline and examines the major political, economic, social and environmental issues presently facing the global community. The course prepares students for advanced study in international politics.

**POLS 101S. Introduction to American Politics. 3 Credits.**

This course introduces students to the political processes and the institutions of American politics. The course examines American political culture, gender and minority rights, citizen participation, national institutions, public policy, and foreign and defense policy.



**POLS 102S. Introduction to Comparative Government and Politics. 3 Credits.**

This course introduces basic concepts and methods for the study of comparative politics. It also surveys and compares the political/socioeconomic development, political cultures/ideologies, political institutions, decision-making processes, and public policies of various countries in the world.

**POLS 126S. Honors: Introduction to American Politics. 3 Credits.**

Open only to students in the Honors College. A special honors section of POLS 101S.

**POLS 127S. Honors: Introduction to International Politics. 3 Credits.**

Open only to students in the Honors College. Special honors section of POLS 100S.

**POLS 300. Introduction to Public Policy. 3 Credits.**

An introduction to various approaches to policy making followed by a detailed study of several of the most important domestic contemporary issues (housing, transportation, education, welfare, etc.). Prerequisites: Six credits in human behavior.

**POLS 301W. Introduction to Public Law. 3 Credits.**

Introduces the student to the American legal system through an examination of its institutions, practitioners, and processes. A general survey of constitutional law, administrative law, civil and criminal law, and selected topics of substantive and procedural dimensions of the court system. (This is a writing intensive course.) Prerequisites: POLS 101S and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**POLS 306. Judicial Process and Behavior. 3 Credits.**

In-depth analysis of the American court system with an emphasis on the political behavior of the system's participants and the procedural dimensions of the court system. Prerequisites: POLS 101S.

**POLS 307. Constitutional Criminal Procedure. 3 Credits.**

Development of criminal procedure under the United States Constitution, with particular emphasis on the Fourth, Fifth, Sixth, Eighth, and Fourteenth Amendments as interpreted by the U.S. Supreme Court. Prerequisites: POLS 101S.

**POLS 308. Research Design. 3 Credits.**

Covers the design and implementation of quantitative and qualitative methods of inquiry in social sciences. Prerequisites: POLS 100S, POLS 101S and POLS 102S or permission of instructor.

**POLS 309. Race, Culture and Public Policy. 3 Credits.**

This course examines the public policy problems of various racial groups in America. It analyzes the extent to which the American political system protects and promotes the concerns of African Americans, Hispanics, Native Americans and Asians. Prerequisites: Six hours in human behavior.

**POLS 310. Political Theory. 3 Credits.**

This course is a survey of political theory covering political thinkers such as Plato, Aristotle, St. Thomas Aquinas, Machiavelli, Locke, Mill, Marx and Rawls as well as central concepts like justice, order, liberty, and equality. Prerequisites: POLS 100S and 101S or permission of the instructor.

**POLS 311. Virginia Politics and Government. 3 Credits.**

This course is a survey of Virginia state and local government institutions, functions, processes, and behavior of political actors. Prerequisites: POLS 101S.

**POLS 312. American Political Thought. 3 Credits.**

The course considers the origins, evolution, purposes, and relevancy of American political thought. It includes studies in democracy versus elitism; civil disobedience versus revolution; liberalism versus conservatism. Prerequisites: POLS 101S or permission of the instructor.

**POLS 313. United Nations Seminar. 1 Credit.**

An examination of the United Nations and key issues facing the international community. Includes a three-day visit to United Nations headquarters in New York. Prerequisites: Junior standing or permission of the instructor.

**POLS 314. European Politics. 3 Credits.**

Analyzes and compares the major political functions and the social, economic, and cultural bases of European states. Also examines the contemporary movement for European economic, military, and political unity. Prerequisites: POLS 100S or POLS 102S or permission of the instructor.

**POLS 316. Politics of Africa. 3 Credits.**

This course is intended to familiarize students with the struggles, advances, and setbacks of African peoples for state-building and socioeconomic development during the colonial and post-independence eras. Prerequisites: Junior standing or permission of the instructor.

**POLS 319. Lobbies and Interest Groups. 3 Credits.**

A survey of the lobby movement in America, its history and present status, with particular attention to current lobbies and interest groups and their impact on the national government. Prerequisites: POLS 101S.

**POLS 320. United Nations I. 3 Credits.**

Part One of the history, working and role of the United Nations system, stressing contemporary issues and student participation in UN simulations and conferences. Prerequisites: POLS 100S or GEOG 100S or permission of the instructor.

**POLS 321W. United Nations II. 3 Credits.**

Prerequisites: POLS 100S or GEOG 100S and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; POLS 320 recommended or instructor permission. Part II of the history, working and role of the United Nations system. The course includes management of a major UN simulation, conference attendance and debate on the role of the UN in current global issues. (This is a writing intensive course.)

**POLS 323. International Political Economy. 3 Credits.**

Introduces students to the primary mechanisms of the global political economy in allocating goods, income, wealth and the means to produce them, with emphasis on the international division of labor. Prerequisites: Six hours of human behavior.

**POLS 324. International Relations Theory. 3 Credits.**

Comparative study of the various theories that attempt to explain the patterns of interactions among the different members of the global community. Draws on historical and modern cases to explain traditional and alternative theories. Prerequisites: POLS 100S and an additional three hours of human behavior.

**POLS 325W. World Politics. 3 Credits.**

This course is designed for intermediate students who are interested in the theoretical and systematic study of world politics. The course first introduces students to several major theoretical approaches to the study of world politics, and then applies these approaches to a number of major issues--ranging from conflict and cooperation, arms control, the protection of human rights, international trade, economic development, and environmental preservation. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, six hours of human behavior and junior standing.

**POLS 326W. American Foreign Policy. 3 Credits.**

This course presents those factors that go into the making and analyzing of American foreign policy, explores their application in decision making, and seeks to test their utilization against contemporary problems. (This is a writing intensive course.) Prerequisites: POLS 100S and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, or permission of the instructor.

**POLS 327W. Politics of National Security. 3 Credits.**

Examination of issues facing America as it debates the use of international force, including the range of national security choices, defense reform, and the tensions between American resort to warfare and global trends transforming the ability to use violence effectively. (This is a writing intensive course.) Prerequisites: POLS 100S or permission of the instructor and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**POLS 328. Russian Politics. 3 Credits.**

Starting with the Soviet communist system, explores Russia's efforts to establish democracy and the rule of law, to fashion a productive, beneficial market economy, to establish viable relationships with the other former republics of the USSR and to craft advantageous foreign and military policies toward the West, Asia, and the developing countries. Prerequisites: POLS 100S or POLS 102S or GEOG 100S or permission of the instructor.

**POLS 331. State and Local Government. 3 Credits.**

This course is a survey of state and local government institutions, functions, processes, and behavior of political actors. Prerequisites: POLS 101S.

**POLS 332W. Europe in World Affairs. 3 Credits.**

Analyzes European politics from World War II to the present. Emphasizes the foreign policies of major European states, including policies towards EU and NATO. Prerequisite: POLS 100S and ENGL 211C or ENGL 221C or ENGL 231C.

**POLS 333. Media and Politics. 3 Credits.**

An examination of the development of the news media and the role of political communication and information in American politics. Analysis of the newsmaking process; media coverage of political campaigns, the President and Congress; the impact of the news media on the American public; and the interaction between public officials and journalists. Prerequisites: POLS 101S.

**POLS 334. Electoral Politics. 3 Credits.**

A survey of electoral politics and behavior, including the structure of the electoral system, contemporary political campaigning, political partisanship, voting behavior, and role of interest groups in the electoral process. Prerequisites: POLS 101S and another three hours in political science.

**POLS 335. Environmental Politics. 3 Credits.**

This course examines the evolution of environmentalism in the United States, including the policy-making process, science and the role played by the public and political institutions. Prerequisites: POLS 101S.

**POLS 336. South Asia Since Independence. 3 Credits.**

This is a comparative study of the main political, economic and social developments in the major countries of South Asia. Themes will include democratization, problems of economic development, the role of caste and religion, the causes of intrastate conflict and interstate conflict and the influence of global forces on the region. Prerequisites: POLS 100S or POLS 102S.

**POLS 337. Latin American Politics. 3 Credits.**

Examines the evolution of Latin American politics, including early colonial and caudillo rule, populism and radicalism, the emergence of military regimes, and the reestablishment of constitutional democracies. Also considers contemporary economic, social, cultural, and environmental issues which condition state-society relations in the region. Prerequisites: Six hours in human behavior.

**POLS 338W. Politics of East Asia. 3 Credits.**

This course examines political cultures/traditions, governmental institutions, decision-making processes, public policies, political organizations, and significant socio-political issues of such East Asian countries as China, Japan and Korea. In addition, it explores the collective impact of these countries on world politics and global economy. (This is a writing-intensive course.) Prerequisites: A grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C, six hours in human behavior, and junior standing or permission of the instructor.

**POLS 350T. Technology and War. 3 Credits.**

This course examines the fundamental changes and continuities that the evolution of technology has brought to armed conflict. It explores the historical development of technology and warfare, emphasizing the role of cultural, social and political choice shaping the development of new military technologies and affecting how they are used. What is the future of Western assumptions about technologically dominated warfare? Prerequisites: POLS 100S or permission of the instructor.

**POLS 367. Cooperative Education. 1-3 Credits.**

Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place. (Qualifies as a CAP experience.) Prerequisites: Approval of the department chair and Career Management.

**POLS 368. Internship in Political Science. 1-12 Credits.**

Individualized practical experience in public bureaucracies, political groups, administrative agencies or law firms. Group seminars are held periodically under the supervision of faculty. Credits are commensurate with the level of the student's involvement. (Qualifies as a CAP experience.) Prerequisites: Nine hours in political science, 3 of which must be in an upper-level course.

**POLS 395. Topics in Political Science. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses and any additional prerequisites will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisites: Junior standing and permission of the instructor.

**POLS 396. Topics in Political Science. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses and any additional prerequisites will appear in the course schedule, and will be more fully described in information distributed to all academic advisors. Prerequisites: Junior standing and permission of the instructor.

**POLS 400. Congress. 3 Credits.**

This is a detailed study of the institutional and behavioral factors at work in legislative decision making, especially at the national level. Emphases are on the interrelationships among Congress, the Presidency, and the bureaucracy and on learning how to do research on specific legislation. Prerequisites: POLS 101S or permission of the instructor.

**POLS 401. Global Environmental Policy. 3 Credits.**

This course analyzes the causes, severity, potential consequences, and proposed solutions regarding global ecological issues with special attention to the scientific debate and the political and policy process. It examines environmental policies of national governments, regional/international organizations, and global conferences. Prerequisites: Six credits in political science.

**POLS 403/503. First Amendment Freedoms. 3 Credits.**

The course deals with the development and practice of conflicting judicial and legal theories concerning our substantive guaranties. Students are asked to act as advocates in developing and substantiating theories of their own. Prerequisites: POLS 101S or permission of the instructor.

**POLS 407. American Presidency. 3 Credits.**

The course covers the development of presidential power and activity, the contemporary operations of the Presidency, and the problems which may confront the institution in the future. Prerequisites: POLS 101S or permission of the instructor.

**POLS 408. American Constitutional Law and Politics I. 3 Credits.**

An examination of the vexatious line between the rights of individuals and those of the state in the American democracy, focusing on such major issues as freedom of expression and worship; freedom of the press; separation of church and state; privacy; and racial and gender discrimination. Prerequisites: POLS 101S.

**POLS 409. American Constitutional Law and Politics II. 3 Credits.**

An examination of separation of powers, federalism and the democratic process as reflected by Supreme Court decisions. Also, the Supreme Court as a political institution. Prerequisites: POLS 101S.

**POLS 410/510. African American Politics. 3 Credits.**

This course examines the political development of Black people in the United States by focusing on the relationship and processes of the American political system. The political dynamics of Black political thought, the Civil Rights Movement, and Black protest politics are also analyzed. Prerequisites: Six hours in human behavior and junior standing.

**POLS 412/512. Politics of the Civil Rights Movement. 3 Credits.**

Examines the political activities which resulted in the passage of the nation's second Civil Rights policy, the 1960 and 1964 Civil Rights Acts, the 1965 Voting Rights Act and the 1968 Fair Housing Act. The course will analyze the underpinnings, leadership, and political strategies of the Civil Rights Movement. Prerequisites: Six hours in human behavior and junior standing.

**POLS 414/514. Politics of Education. 3 Credits.**

The question of power, often ignored by education policy analysts and researchers, is a principal focus of this seminar. Issues ranging from the role of education in political socialization and the politics of affirmative action and equal opportunity are examined. Prerequisites: Junior standing or permission of the instructor.

**POLS 415/515. Women and Politics in America. 3 Credits.**

Examines women's place in political theory and the practice of politics in the United States. A major focus is to trace the development of women's political rights, the impact of public policy on the lives of American women and to see how women influence and participate in the political process. Prerequisites: POLS 101S or permission of the instructor.

**POLS 418. Quantitative Methods. 3 Credits.**

A survey of and practicum in the basic techniques of quantitative research, including the logic of empirical research, the identification of data sources, and the use of appropriate statistical techniques. Prerequisites: POLS 101S and a grade of C- or better in POLS 308. Pre- or corequisite: A grade of C- or better in STAT 130M.

**POLS 419. Jurisprudence. 3 Credits.**

An examination of the history of legal thought and developments of natural law, as well as an in-depth analysis of legal positivism and realism. Particular attention is paid to American legal philosophy. Prerequisites: POLS 408 or POLS 409 or permission of the instructor.

**POLS 420W/520. Southern Politics. 3 Credits.**

This seminar focuses on the politics of the American South from the 1940s to the present. Emphasis is on introducing students to contrasting explanations and analysis about the politics of the American South. (This is a writing intensive course.) Prerequisites: POLS 101S and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, or permission of the instructor.

**POLS 421/521. International Law. 3 Credits.**

Surveys major areas of public international law (e.g., laws of warfare, law of the sea, conflict resolution, etc.). Emphasizes the relationship between international law and international politics. Prerequisites: Six hours in political science or permission of the instructor; POLS 325W is recommended.

**POLS 424/524. International Organization. 3 Credits.**

Course provides a basis for understanding the role and importance of international organizations in contemporary international relations. Focuses on development and history of global organizations, with particular emphasis on the United Nations, and regional and functional organizations. Prerequisites: POLS 100S and POLS 325W and additional internationally-focused course or permission of the instructor.

**POLS 434/534. Political Participation in the United States. 3 Credits.**

An examination of current theories and research on political behavior, conventional and unconventional modes of political participation, and the impact of participation on the political system. Prerequisites: Six semester hours of political science.

**POLS 435/535. Chinese Politics. 3 Credits.**

A study of origins of the Chinese revolution; development and functions of the Chinese Communist Party; government institutions; the defense establishment; evolution of foreign policy; and post-Mao political and economic reforms. Prerequisites: POLS 100S and POLS 102S or permission of the instructor.

**POLS 436/536. Japanese Politics. 3 Credits.**

A study of Japan's historical political development and social patterns; government institutions; problems of the constitution; and foreign and defense policy. Prerequisites: POLS 100S and POLS 102 or permission of the instructor.

**POLS 437/537. International Relations in East Asia. 3 Credits.**

A study of contemporary issues (political, economic, and strategic) in the East Asia area; the interactions of China, Japan, the United States, and the former Soviet republics in East Asia. Prerequisites: POLS 100S.

**POLS 439/539. International Relations of African States. 3 Credits.**

This course aims to expose students to an examination of the workings of international politics from the viewpoint of Africans and African states. International relations have tended to look at the world from the viewpoint of its most powerful states. Yet, most the world's states - notably in Africa - are weak but have great potential global impact. Prerequisites: Junior standing or permission of the instructor.

**POLS 442/542. Twentieth Century Dictatorships. 3 Credits.**

A study of the Fascist, Nazi, Stalin and Mao regimes and the forces that brought them to power and sustained them, including a study of the impact of their policies on their people and neighboring states. Prerequisites: Six hours in human behavior and junior standing or permission of the instructor.

**POLS 445. Globalization: Dynamics and Implications. 3 Credits.**

Explores the essential characteristics of globalization and its implications for social relations and existing institutions. Prerequisites: Three hours in economics and 6 hours in political science.

**POLS 455/555. The Politics of Climate Change. 3 Credits.**

An examination of the science of climate change and how United States political actors have responded to this global environmental challenge. Prerequisites: Junior standing or permission of the instructor.

**POLS 458. Weapons of Mass Destruction in Global Security. 3 Credits.**

Since the end of the Cold War, weapons of mass destruction have emerged as one of the most dangerous and contentious issues in international affairs. The course examines how these weapons are made, how they proliferate, and how they are controlled. Prerequisites: POLS 100S.

**POLS 461. Seminar in European Politics. 3 Credits.**

This course focuses on one specific European country such as France, Germany, the United Kingdom, etc. Examination of trends and events which most influenced the evolution of domestic politics and foreign relations from World War II to the present. Prerequisites: POLS 100S or POLS 102S and POLS 314 or POLS 332W.

**POLS 462. Ethnic Conflict in the New Global Order. 3 Credits.**

Ethnically based conflict is presently a pervasive worldwide phenomenon. This course examines internal and external factors causing ethnic conflicts and mechanisms for resolving or mitigating such conflicts. Prerequisites: Six hours in human behavior.

**POLS 466/566. Politics of the Middle East. 3 Credits.**

An analysis of the political processes throughout the region and in selected nations of the Middle East. Topics to be discussed include inter-Arab relations, the Arab-Israeli conflict, the Iran-Iraq rivalry and foreign power involvement in the Middle East. Prerequisites: Junior standing or permission of the instructor.

**POLS 470. African Americans and Foreign Affairs. 3 Credits.**

This course focuses on race, ethnicity, and the role and influence of African Americans in international affairs and American foreign policy making. It investigates the activities of African Americans in the international arena. The emphasis is on how African Americans have participated and the results of that participation from the era of slavery to Barack Obama. Prerequisites: Junior standing or permission of the instructor.

**POLS 480W. Senior Seminar in International Studies. 3 Credits.**

Interdisciplinary research and preparation of a senior thesis in international studies (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, senior standing in the BAIS degree program or permission of the instructor.

**POLS 481. Seminar in American Politics. 3 Credits.**

The advanced study of selected topics in American politics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. Prerequisites: Junior standing in political science.

**POLS 493. Great Decisions. 1 Credit.**

An examination and discussion of critical world issues based upon the Foreign Policy Association's Great Decision Series. Prerequisites: POLS 100S or POLS 101S.

**POLS 495/595. Topics in Political Science. 1-3 Credits.**

The advanced study of selected topics in political science which, due to their specialized nature, may not be offered regularly. Prerequisites: Appropriate survey course or permission of the instructor.

**POLS 496/596. Topics in Political Science. 1-3 Credits.**

The advanced study of selected topics which, due to their specialized nature, may not be offered regularly. Prerequisites: Appropriate survey course or permission of the instructor.

**POLS 497/597. Independent Research in Political Science. 1-3 Credits.**

Independent research in political science under the supervision of a faculty member. Prerequisites: Senior standing or permission of the instructor.

**POLS 498. Tutorial Work-Special Topics. 1-3 Credits.**

Independent research in political science under the supervision of a faculty member. Prerequisites: Senior standing or permission of instructor.

## PRTG - Portuguese

### PORTUGUESE Courses

**PRTG 101F. Beginning Portuguese I. 3 Credits.**

Lecture 3 hours; 3 credits each semester. 101F or permission of the instructor is prerequisite to 102F. Introduction to the four skills (listening, speaking, reading, writing) of elementary Portuguese. 102F will build and expand on the linguistic proficiency in all four skills.

**PRTG 102F. Beginning Portuguese II. 3 Credits.**

Lecture 3 hours; 3 credits each semester. 101F or permission of the instructor is prerequisite to 102F. Introduction to the four skills (listening, speaking, reading, writing) of elementary Portuguese. 102F will build and expand on the linguistic proficiency in all four skills.

**PRTG 295. Topics in Portuguese. 1-3 Credits.**

1-3 credits. A study of selected topics for elective credit. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

## PRTS – Parks, Recreation and Tourism Studies

### PARKS, RECREATION AND TOURISM STUDIES Courses

**PRTS 200. Backpacking. 2 Credits.**

Students will finish this course with the ability to demonstrate competency in and teach fundamental camping skills, including backpacking, cooking, travel techniques, Leave No Trace skills, and associated safety skills. Additionally, students will demonstrate an increased understanding of issues related to the administration of federally-managed public lands, such as those used in this class, as they relate to recreation and other uses. An overnight field trip is required.

**PRTS 201. Recreation Programming and Leadership. 3 Credits.**

This course is designed to help students understand and develop their activity leadership and programming skills. Theories and techniques in relation to community, therapeutic, commercial, and outdoor recreation leisure service provision are explored. The course will examine the basic principles of recreation programming and leadership including needs assessment, public relations, and evaluation. Prerequisites: sophomore standing.

**PRTS 211. Foundations of Parks, Recreation and Tourism. 3 Credits.**

An examination of the historical and philosophical bases of the recreation movement in the U.S. To include a review of theories of play and an assessment of the social, economic and cultural determinants of nonwork-time behavioral patterns. The relationship of leisure to education and the involvement of the government at federal, state and local levels will be considered.

**PRTS 251. Introduction to Park and Recreation Management. 3 Credits.**

This introductory course addresses all of the essential topics that professionals within park and recreation management must know, including: program planning and evaluation, decision making, facility management, human resources, marketing, budgeting and financial planning, and policy making.

**PRTS 261. Introduction to Therapeutic Recreation. 3 Credits.**

This course is designed to present an overview of therapeutic recreation as a profession. Philosophy, historical development and standards of practice will be discussed. Students will develop an understanding of professional training, credentialing, and the recreation profession's responsibility to provide recreational opportunities for all individuals. Implementation of therapeutic recreation services for a wide variety of special populations will be explored.

**PRTS 271. Introduction to Tourism Management. 3 Credits.**

This course is designed to present an introduction to the development of the tourism (airline, cruise, rail, and hotel) industry. Emphasis is placed on historical and technological development, the different components of the industry, and career opportunities in tourism.

**PRTS 285. Diversity in Parks, Recreation and Tourism Studies. 3 Credits.**

This course is designed as an introduction to the responsibilities of public, private, and commercial leisure service delivery systems in relation to their diverse constituents. The objective of the course is to increase students' understanding of ethnic/racial groups, gays and lesbians, people with disabilities, the elderly, and other diverse groups in park/recreation/tourism settings.

**PRTS 301. Youth Development through Recreation. 4 Credits.**

This class will use the Benefits-Based Programming (BBP) Model to construct an experience that targets the social-emotional needs of youth. Through this service-learning based class students will explore research, theory, practice, and techniques of structuring recreation experiences for youth. Prerequisites: junior standing.

**PRTS 302. Facilitating the Recreation Experience. 4 Credits.**

This course examines research, theory, practice, and technique of structuring recreation experiences to facilitate predetermined outcomes. This course includes the examination of theories of learning, motivation, emotion, socialization, human development, and group dynamics as related to the facilitation of recreation experiences. Prerequisites: PRTS 301.

**PRTS 332. Personnel Management in Recreation. 3 Credits.**

This course examines personnel management principles, practices, and policies in the public, private, and commercial recreation delivery systems. The course explores general personnel management as well as personnel management practices unique to the park, recreation, and tourism industry. Prerequisites: Junior standing or permission of the instructor.

**PRTS 366. Internship Seminar. 1 Credit.**

Agency field placement is required of all students in Park, Recreation and Tourism Studies. Seminar will include resume and cover letter writing skills, internship requirements, agency placement referrals, and interviewing techniques. (cross-listed with SMTG 366) (qualifies as a CAP experience) Prerequisites: junior standing or permission of the instructor.

**PRTS 368. Internship. 12 Credits.**

Supervised agency placement is required of all students in the Park, Recreation and Tourism Studies program. Placement must fulfill all professionally appropriate certification standards. Minimum of 400 clock hours. (qualifies as a CAP experience) Prerequisites: completion of all recreation emphasis and core courses including PRTS 366, plus senior standing.

**PRTS 369. Practicum in Parks, Recreation and Tourism Studies. 3-6 Credits.**

Selected field-based experiences in a park, recreation and tourism service setting. Minimum of 200 clock hours. (qualifies as a CAP experience) Prerequisites: junior standing.

**PRTS 405. Outdoor Recreation. 3 Credits.**

This course is designed to increase knowledge, skills, techniques, policies and procedures related to selected outdoor recreation activities. Students are required to participate in outdoor recreation experiences through the Outdoor Adventure Center. Prerequisites: junior standing or permission of the instructor.

**PRTS 406. Outdoor Leadership and Environmental Education. 3 Credits.**

This course is designed to examine the history, development, and trends in outdoor leadership and environmental education, including the development of curriculum concepts that foster an environmentally literate citizenry. Leadership and teaching techniques for successful utilization of the out-of-doors as a classroom will be explored. Prerequisites: junior standing or permission of the instructor.

**PRTS 410. Clinical Aspects of Therapeutic Recreation. 3 Credits.**

The course is designed to provide students with an understanding of treatment centered therapeutic recreation program design. The role of the recreation therapist will be explored. Topics will include patient assessment, activity analysis, documentation, treatment plans and program development. Prerequisites: junior standing or permission of instructor.

**PRTS 420. Intervention Techniques in Therapeutic Recreation. 3 Credits.**

Course is designed to introduce students to various disabling conditions that receive therapeutic recreation services. Therapeutic recreation intervention techniques used while implementing a program will be discussed. Emphasis will be given to the rehabilitative and habilitative goals of intervention techniques. Prerequisites: junior standing or permission of instructor.

**PRTS 425. Financial and Risk Management in Recreation. 3 Credits.**

An examination of the principles and practices of facility management in recreation. Focus is geared toward the planning and design of indoor and outdoor recreation facilities as well as how to review and develop effective financial plans. Prerequisites: junior standing or permission of the instructor.

**PRTS 430. Assessment and Documentation in Therapeutic Recreation. 3 Credits.**

This course will provide students with a detailed examination of assessment and documentation procedures used in therapeutic recreation. Course focus includes the assessment and documentation process, including instrument design, selection, and implementation. Use of assessment data in treatment planning and evaluation will also be examined. Prerequisites: PRTS 261, junior standing or permission of instructor.

**PRTS 433. Community Recreation. 3 Credits.**

This course is designed to introduce students to the various facets of municipal and county parks and recreation service provision. It will include the broad scope of parks and recreation services and the impact on a community. Prerequisite: junior standing or permission of instructor.

**PRTS 441. Marketing of Hospitality Services. 3 Credits.**

This course is designed to introduce students to theories and concepts related to successful service-oriented tourism and recreation businesses. It provides a solid foundation in the important aspects of hospitality/tourism operations, including human resources, guest services, psychographics, demographics, marketing and the assessment of industry needs. Prerequisites: junior standing or permission of the instructor.

**PRTS 450. Disabilities and Aging in Therapeutic Recreation. 3 Credits.**

This course is designed to introduce students to a variety of disabilities and the aging process. The course will examine disabilities with a specific emphasis placed on determining the treatment and recreational needs of mature adults. Projected trends and issues related to disabilities and aging will be discussed. Prerequisites: junior standing or permission of instructor.

**PRTS 460. Managing Therapeutic Recreation Services. 3 Credits.**

This course is designed to address issues related to managing therapeutic recreation services. Topics discussed include reimbursement of services, staff development, written plan of operation, marketing of services, ethical behavior, and service delivery management. Prerequisites: junior standing or permission of instructor.

**PRTS 461/561. The Tourism and Hospitality Industry. 3 Credits.**

This course explores tourism from a social perspective. The focus of the course will be on economic and social dimensions of tourism, tourism development strategies, and current research in hospitality from national and international case studies. Prerequisites: junior standing or permission of instructor.

**PRTS 475/575. Tourism and Cultural Heritage Management. 3 Credits.**

This course examines the principles and practices of planning, marketing, and managing cultural tourism. Assessment, development, and maintenance of cultural tourism products are explored. Prerequisites: junior standing or permission of the instructor.

**PRTS 482W. Applied Research and Evaluation in Recreation. 4 Credits.**

The purpose of this course is to give students basic knowledge in research and evaluation within the content of parks, recreation and tourism studies. Specific focus is placed on integrating basic research, program evaluation, and statistical analysis in an applied manner within the field. Topics include program interventions, program evaluations, and survey research. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**PRTS 490. Convention and Meeting Services. 3 Credits.**

This course introduces students to convention and meeting service management. Content includes both convention sales and convention services. Main topics include: planning, organization, and implementation of a meeting, convention or tradeshow. Students can earn a certificate through the American Hotel and Lodging Association Education Institute after completion of the course. Prerequisites: Junior standing.

**PRTS 491. Festival and Event Management. 3 Credits.**

This course will introduce students to the growing profession of events management. Specific focus will be on knowledge that encompasses the management of public assembly for the purpose of celebration, education, marketing and reunions. Prerequisites: junior standing or permission of the instructor.

**PRTS 495/595. Topics. 1-3 Credits.**

This course provides an opportunity for in-depth study of selected topics in the variety of areas comprising parks, recreation and tourism studies. Prerequisites: junior standing.

**PRTS 497. Independent Study. 1-3 Credits.**

Individualized instruction to include research, specialized studies, or other scholarly writing. Prerequisites: junior standing or permission of the instructor.

## PSYC - Psychology

### PSYCHOLOGY Courses

**PSYC 201S. Introduction to Psychology. 3 Credits.**

Introduction to the scientific study of psychology, including the methods used to gather and interpret data. The student is introduced to fundamental terms, theories, and concepts dealing with the biological bases of behavior; learning; perception; cognition and intelligence; personality; psychological disorders; human development; and social processes. An emphasis is placed on application of concepts and critical thinking.

**PSYC 203S. Lifespan Development. 3 Credits.**

A broad contemporary view of the processes of development. The influences of biological and environmental factors in the development of personality and cognitive functioning are explored.

**PSYC 226S. Honors: Introduction to Psychology. 3 Credits.**

Open only to students in the Honors College. A special honors section of PSYC 201S.

**PSYC 227S. Honors: Lifespan Development. 3 Credits.**

Open only to students in the Honors College. A special honors section of PSYC 203S.

**PSYC 303. Industrial/Organizational Psychology. 3 Credits.**

An application of psychological principles and research to human behavior in work settings. Among the topics covered are personnel selection, training, and evaluation; employee motivation and job satisfaction; and organizational leadership and theory. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 304. Social Psychology. 3 Credits.**

The behavior of the individual as affected by other people and groups. Interpersonal attraction, attitude change, group dynamics, and the application of psychology to social problems are among the topics covered. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 306. Health Psychology. 3 Credits.**

Course examines how psychological states (e.g., anxiety, stress) influence physical health. The course also examines how physical states (e.g., illness, pain, injury) influence psychological health. Topics include the impact of stress on health and proneness to illness; coping with illness, injury and trauma; and the role of health-enhancing behaviors in maintaining physical health. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher or permission of the instructor.

**PSYC 308. Positive Psychology. 3 Credits.**

This course examines and discusses psychological theories and research that focus on human strengths and potential. Factors that contribute to happiness and a fulfilling life are emphasized. Lectures, self-assessments and experiential exercises are used to understand how to cultivate a meaningful life. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 311. Psychology of Criminal Behavior. 3 Credits.**

The study of crime from a psychological perspective. Topics include theories of criminal behavior, violent and non-violent crime, sexual offenses, insanity, addiction, white collar crime, and other criminal behaviors. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 317. Quantitative Methods. 4 Credits.**

The application of statistical principles to psychological research problems, including an introduction to the principles of experimental design. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher, completion of MATH 102M or higher, and STAT 130M or higher with a grade of C (2.0) or higher.

**PSYC 318W. Research Methods in Psychology. 4 Credits.**

An examination of the principles of psychological research. Experimental design and interpretation are stressed. The student learns to locate and read technical articles and to report his or her own research in the style of the American Psychological Association. Prerequisites: Completion of ENGL 211C or ENGL 221C or ENGL 231C and PSYC 317 with a grade of C (2.0) or higher. (This is a writing intensive course.)

**PSYC 321. Psychology of the Exceptional Child. 3 Credits.**

A study of the psychological development of the child with physical, emotional, social, intellectual, and educational disabilities. Prerequisites: Completion of PSYC 201S or PSYC 203S with a grade of C (2.0) or higher.

**PSYC 322. The Psychology of Adolescence. 3 Credits.**

A survey of the processes of development during adolescence. Covers topics such as the influences of biological, emotional, social, and cognitive factors on personality development and adjustment of the adolescent. Prerequisites: Completion of PSYC 201S or PSYC 203S with a grade of C (2.0) or higher.

**PSYC 323. Psychology of Women. 3 Credits.**

An examination of the major determinants of the psychology of women from theoretical, biological, interpersonal and sociocultural perspectives. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 325. Drugs and Behavior. 3 Credits.**

An examination of the effects of psychoactive drugs on behavior and the factors involved in drug use. Current research literature is discussed. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 334. Social Development. 3 Credits.**

This course provides students with theories and research on the development of social processes from birth to adolescence. Major theories of social development and research are examined. Prerequisites: Completion of PSYC 203S with a grade of C (2.0) or higher.

**PSYC 343. Personnel Psychology. 3 Credits.**

The application of psychological principles and research to the development and improvement of personnel subsystems in business and industry. Emphasis is placed on the assessment, selection and training of workers and manager. While not required, PSYC 317 is recommended. Prerequisites: Completion of PSYC 303 with a grade of C (2.0) or higher.

**PSYC 344. Human Factors. 3 Credits.**

The application and evaluation of psychological principles and research relating human behavior to the design of tools, technology, and the work environment. Prerequisites: Completion of PSYC 318W with a grade of C 2.0 or higher.

**PSYC 345. Organizational Psychology. 3 Credits.**

This course emphasizes the study of human behavior in organizations. Topics include leadership, motivation, group behavior, communications, power and politics, and organization change. Prerequisites: Completion of PSYC 303 with a grade of C (2.0) or higher.

**PSYC 351. Child Psychology. 3 Credits.**

The development of children within their diverse environments is examined. A focus is on the methods used to understand how children experience their world. Prerequisites: Completion of PSYC 203S or PSYC 201S with a grade of C (2.0) or higher.

**PSYC 352. Cognitive Development During Childhood. 3 Credits.**

The course will acquaint the student with theories and research on the development of cognitive processes from birth to adolescence. Major theories of cognitive development and research on the various cognitive processes will be reviewed. Prerequisites: Completion of PSYC 203S with a grade of C (2.0) or higher.

**PSYC 353. The Psychology of Adulthood and Aging. 3 Credits.**

The study of adults with emphasis on aging. Current theories and research as well as the characteristics, lifestyles, and activities of adulthood and aging will be discussed. Prerequisites: PSYC 201S or PSYC 203S.

**PSYC 363. Psychology of Sex. 3 Credits.**

A study of critical issues in human sexuality; gender and sexual identity, sexual arousal and erotic behavior, relationship development, and sexual dysfunction and deviation disorders. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher or permission of the instructor.

**PSYC 368. Internship in Psychology. 3 Credits.**

For ODU psychology majors only. Students engage in academically relevant work related activities in non-clinical settings. Available for pass/fail grading only. Students should work with the Career Management Center to identify their placement in the semester prior to enrollment. A maximum of 6 credits of PSYC 368 and/or PSYC 369 can be counted towards the major in Psychology. (qualifies as a CAP experience) Prerequisites: Completion of PSYC 317 with a grade of C (2.0) or higher and permission of the instructor. Pre- or corequisites: Completion of PSYC 318W with a grade of C or higher.

**PSYC 369. Practicum in Clinical Psychology. 3 Credits.**

For ODU psychology majors only. Students engage in academically relevant work activities in clinical settings. Available for pass/fail grading only. Students should work with the Career Management Center to identify their placement in the semester prior to enrollment. Instructor approval is required prior to registration. A maximum of 6 credits of PSYC 368 and/or PSYC 369 can be counted towards the major in Psychology. (qualifies as a CAP experience) Corequisite: PSYC 371. Prerequisites: Completion of PSYC 317 and PSYC 318W with a grade of C (2.0) or higher; at least 80 earned credits hours; at least 14 hours in Psychology at the 300/400 level; and permission of the instructor.

**PSYC 371. Clinical Supervision in Psychology. 1 Credit.**

Students doing practica at designated clinical placements must also enroll in this course taught by a clinical faculty member. This seminar addresses the special issues in the areas of safety, confidentiality, and professionalism that arise in clinical settings. Students doing non-clinical internships may also enroll in the course. A maximum of 2 credits of PSYC 371 can be counted towards the major in psychology. Corequisite: PSYC 369.

**PSYC 395. Topics in Psychology. 1-3 Credits.**

The department offers selected topics that may not be offered on a regular basis. Prerequisite: permission of the instructor.

**PSYC 396. Topics in Psychology. 1-3 Credits.**

The department offers selected topics that may not be offered on a regular basis. Prerequisite: permission of the instructor.

**PSYC 400. Senior Seminar. 1 Credit.**

Discussion of current research, theoretical, and professional topics in psychology. Prerequisites: senior standing and minimum GPA of 3.25.

**PSYC 403. History of Psychology. 2,3 Credits.**

A survey of the historical development of modern psychology. The major systems and their influences on contemporary American psychology are studied. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 405. Abnormal Psychology. 3 Credits.**

A study of psychopathology, covering various behavior disorders, their descriptions, characteristics, and causation. Methods of therapeutic technique are reviewed. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 408. Theories of Personality. 3 Credits.**

A study of the structure of personality and the dimensions along which individuals differ. The contributions of major personality theorists and the implications of current research are considered. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 410. Human Cognition. 3 Credits.**

An investigation of the ways in which people learn and think. Current models of human memory and cognition are considered in relation to the evidence on human thinking capabilities. The role of language in thought and knowledge acquisition is also explored. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 412. Psychological Tests. 3 Credits.**

An examination of the history, theory and applications of psychological testing. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 413. Sensation and Perception. 3 Credits.**

An analysis of the processes by which humans obtain information about the environment through the eyes, ears, and other sensory systems. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 414. Principles of Learning. 3 Credits.**

Course focuses on basic learning principles and processes; classical conditioning, instrumental conditioning, discrimination, attention, appetitive and aversive conditioning. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 417. Advanced Statistics and Computer Applications. 3 Credits.**

The course covers advanced statistical methods and computer applications that build on knowledge and skills acquired in PSYC 317 and PSYC 318W. Prerequisites: Completion of PSYC 317 and PSYC 318W with a grade of C (2.0) or higher, or permission of the instructor.

**PSYC 420. Cross-Cultural Psychology. 3 Credits.**

A wide variety of psychological research and theory relevant to human behavior in different cultures is examined and the impact of culture on human behavior is discussed. The course examines cross-cultural research conducted by scholars around the world. In addition to factual knowledge, emphasis is placed on critical thinking and problem solving. Prerequisite: junior standing or permission of instructor.

**PSYC 424. Physiological Psychology. 3 Credits.**

An investigation of the biological bases of behavior including mental illness, motivation, learning, memory and language. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 430. Animal Behavior. 3 Credits.**

This course explores the environmental and social factors that affect the behavior of animals. Special attention is given to the mechanisms of behavior and the evolutionary context of behavior. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 431. Community Psychology. 3 Credits.**

This course focuses on behavioral prevention and intervention efforts targeting social problems. The goal is to understand how to design and evaluate such programs. Topics vary, but include an emphasis on public health and safety issues. Individual and group behavior change, and cultural design, are each considered when targeting problems. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher or permission of the instructor.

**PSYC 460. Psychology of African Americans. 3 Credits.**

This course examines the issues and perspectives related to the psychological evolution of African Americans in the United States. Particular emphasis is placed on exploring the discipline of psychology from an Afrocentric focus. Prerequisites: Completion of PSYC 201S with a grade of C (2.0) or higher or permission of the instructor.

**PSYC 461. Drug Abuse and Dependence. 3 Credits.**

This course offers an intensive review and clinical analysis of the issues and problems associated with addictive behavior with an emphasis on alcohol abuse and dependency. Prerequisite: Completion of PSYC 201S with a grade of C (2.0) or higher.

**PSYC 487. Honors Program in Psychology. 3 Credits.**

For ODU psychology majors only. With psychology faculty supervision, student develops an honors thesis proposal for approval by the Psychology Honors Program committee. See section on Honors Program in Psychology in this Catalog. Prerequisites: PSYC 497; cumulative GPA of 3.25 or higher and psychology GPA of 3.50 or higher; permission of the departmental Honors Program chair.

**PSYC 488. Honors Program in Psychology. 3 Credits.**

For ODU psychology majors only. With psychology faculty supervision, student conducts the supervised honors research and documents it in a thesis for approval by the Psychology Honors Program committee. Student also participates in a required seminar to discuss and present the research. See section on Honors Program in Psychology in this Catalog. Prerequisites: PSYC 497; cumulative GPA of 3.25 or higher and psychology GPA of 3.50 or higher; permission of the departmental Honors Program chair.

**PSYC 489. Readings in Psychology. 3 Credits.**

The course may be taken only once. An individualized course in which the student does library research and writes a paper. Prerequisite: approval by supervisory faculty member and department.

**PSYC 490. Readings in Psychology. 3 Credits.**

The course may be taken only once. An individualized course in which the student does library research and writes a paper. Prerequisite: approval by supervisory faculty member and department.

**PSYC 495. Topics in Psychology. 1-3 Credits.**

The department offers selected topics that may not be offered regularly. These special topics will appear in the course listing each semester. Prerequisite: PSYC 201S or permission of the instructor.

**PSYC 496. Topics. 1-3 Credits.**

The department offers selected topics that may not be offered regularly. These special topics will appear in the course listing each semester. Prerequisite: Completion of PSYC 201S with a grade of C (2.0) or higher or permission of the instructor.

**PSYC 497. Supervised Research. 3 Credits.**

For ODU psychology majors only. Student and faculty supervisor develop and approve a contract of required research activities for the semester, such as attending research lab meetings, data collection, coding and/or analysis, library research, etc. Prerequisites: PSYC 317 and PSYC 318W, GPA of 2.5, pre-approval by psychology faculty supervisor.

**PSYC 498. Supervised Research. 3 Credits.**

For ODU psychology majors only. Student and faculty supervisor develop and approve a contract of required research activities for the semester, such as attending research lab meetings, data collection, coding and/or analysis, library research, etc. Prerequisites: PSYC 317 and PSYC 318W, GPA of 2.5, pre-approval by psychology faculty supervisor.

## REL - Religious Studies

### RELIGIOUS STUDIES Courses

**REL 311. Hebrew Bible/Old Testament. 3 Credits.**

An investigation of the Hebrew Bible on the basis of Biblical criticism and research. Attention is given to the cultural and historical background of these writings. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor.

**REL 312. New Testament. 3 Credits.**

An investigation of New Testament literature and thought on the basis of Biblical criticism and research. Attention is given to the religious and cultural background of early Christianity, particularly in late Judaism. Prerequisites: junior standing and three semester hours in philosophy, or permission of the instructor.

**REL 350. Judaism. 3 Credits.**

A study of the Jewish tradition, including its primary texts, historical development, intellectual tenets, and contributions to human culture. Specific attention will be given to Judaism as a way of life. Prerequisites: three semester hours in philosophy or permission of the instructor.

**REL 351. Christianity. 3 Credits.**

A study of the Christian tradition, including its primary texts, historical development, intellectual tenets, and contributions to human culture. Specific attention will be given to Christianity as a way of life. Prerequisites: three semester hours in philosophy or permission of the instructor.

**REL 352. Islam. 3 Credits.**

A study of the Islamic tradition, including its primary texts, historical development, intellectual tenets, and contributions to human culture. Specific attention will be given to Islam as a way of life. Prerequisites: three semester hours in philosophy or permission of the instructor.

**REL 395. Topics in Religious Studies. 3 Credits.**

The advanced study of selected topics designed to permit qualified students to work on subjects that, because of their specialized nature, may not be taught regularly. These courses will appear in the course schedule booklet and will be more fully described in information distributed to all academic advisors. Prerequisites: 3 hours in PHIL or permission of the instructor.

**REL 396. Topics in Religious Studies. 3 Credits.**

The advanced study of selected topics designed to permit qualified students to work on subjects that, because of their specialized nature, may not be taught regularly. These courses will appear in the course schedule and will be more fully described in information distributed to all academic advisors. Prerequisites: three hours in PHIL or REL or permission of the instructor.

**REL 495/595. Topics in Religious Studies. 1-3 Credits.**

The advanced study of selected topics designed to permit qualified students to work on subjects that, because of their specialized nature, may not be taught regularly. These courses will appear in the course schedule and will be more fully described in information distributed to all academic advisors. Prerequisites: 3 hours in PHIL or REL or permission of the instructor.

**REL 496/596. Topics in Religious Studies. 1-3 Credits.**

The advanced study of selected topics designed to permit qualified students to work on subjects that, because of their specialized nature, may not be taught regularly. These courses will appear in the course schedule and will be more fully described in information distributed to all academic advisors. Prerequisites: three hours of PHIL or REL or permission of the instructor.

**REL 497/597. Tutorial Work in Religious Studies. 1-3 Credits.****REL 498/598. Tutorial Work in Religious Studies. 1-3 Credits.**

Independent reading and study of a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: permission of the instructor.

## RUS - Russian

### RUSSIAN Courses

**RUS 101F. Beginning Russian I. 3 Credits.**

Aural comprehension, oral drill and discussion of grammar principles, written exercises, and reading assignments.

**RUS 102F. Beginning Russian II. 3 Credits.**

Aural comprehension, oral drill and discussion of grammar principles, written exercises, and reading assignments. Prerequisites: RUS 101F.

**RUS 195. Topics in Russian. 1-3 Credits.**

A study of selected topics designed as electives. These courses will appear in the course schedule. Highly interactive.

**RUS 196. Topics in Russian. 1-3 Credits.**

A study of selected topics designed as electives. These courses will appear in the course schedule. Highly interactive.

**RUS 201. Intermediate Russian I. 3 Credits.**

Graded readings with grammar review followed in the second semester by an introduction to Russian literature.

**RUS 202. Intermediate Russian II. 3 Credits.**

Graded readings with grammar review followed in the second semester by an introduction to Russian literature. Prerequisite: RUS 201.

**RUS 295. Topics in Russian. 1-3 Credits.**

A study of selected topics designed as electives. These courses will appear in the course schedule.

**RUS 296. Topics in Russian. 1-3 Credits.**

A study of selected topics designed as electives. These courses will appear in the course schedule.

**RUS 305. Contemporary Russian Conversation. 3 Credits.**

A study of selected dialogues emphasizing the spoken language and designed to improve oral proficiency and aural comprehension. Prerequisite: RUS 202 or advanced placement.

**RUS 395. Topics in Russian. 1-3 Credits.**

A study of selected topics designed as electives. These courses will appear in the course schedule. Prerequisite: RUS 202 or the equivalent.

## SCI - Sciences

### SCIENCES Courses

**SCI 101. Introduction to Sciences. 1 Credit.**

1 credit. Presents the relationship between majors in the College of Sciences and the student's career goals for students planning to major in a science. Provides an orientation to the University emphasizing the learning skills needed for science majors.

**SCI 195. Topics. 1-3 Credits.****SCI 302T. The Evolution of Modern Science. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: HIST 100H, HIST 101H, HIST 102H, HIST 103H, HIST 104H, or HIST 105H. This course outlines the history of science from Aristotle to the present. Scientific progress has always been coupled with human progress and subject to the politics and culture of the times. Scientists, in most instances, have been in the mainstream of society. But, because of their curiosity and innovation, scientists have often clashed with the prevailing culture. (Cross-listed with HIST 386T).

**SCI 395. Special Topics. 3 Credits.**

0-3 credits.



**SCI 468. Research Methods in Math and Sciences. 3 Credits.**

Emphasizes the tools and techniques used to solve scientific problems. Topics include use and design of experiments, use of statistics to interpret experimental results, mathematical modeling of scientific phenomena, and oral and written presentation of results. Students will perform four independent inquiries, combining skills from mathematics and science to solve research problems. Prerequisites: BIOL 307, BIOL 308 or BIOL 315 OR CHEM 321 OR MATH 212 OR OEAS 306 or OEAS 310 OR PHYS 232N.

**SCI 495. Topics. 1-3 Credits.**

1-3 credits.

## SEPS - STEM Education and Professional Studies

### STEM EDUCATION AND PROFESSIONAL STUDIES Courses

**SEPS 100. Sales Techniques. 3 Credits.**

Lecture 3 hours; 3 credits. This is an introductory course that emphasizes the concept of determining customer needs, wants, and desires and matching them to products and services for a long-term sales relationship. The course is not intended for students pursuing majors in the College of Business and Public Administration.

**SEPS 102. Advertising and Promotion. 3 Credits.**

Lecture 3 hours; 3 credits. This is an introductory course designed to teach the fundamental product and service promotion processes of planning and producing advertising and promotion campaigns. The course is not intended for students pursuing majors in the College of Business and Public Administration.

**SEPS 195. Topics. 1 Credit.**

Topics of current interest in the area of STEM Education and Professional Studies.

**SEPS 208. Retail Merchandising and Buying. 3 Credits.**

This course introduces students to the fundamentals of retail merchandising and explores retail buyers' skills and responsibilities including identifying customers and vendors, retail mathematics, buying plans, and merchandise control.

**SEPS 220. The Fashion Industry. 3 Credits.**

Lecture 3 hours; 3 credits. Course is designed for marketing education and fashion students. It covers fashion as a force which alters patterns of change and growth in the fashion industry to include designers, manufacturers, buyers, retailers, and customers. Students explore the latest trends in style and materials.

**SEPS 234. Survey of Dress and Costume. 3 Credits.**

Lecture 3 hours; 3 credits. Whether high fashion or low, glitz or grunge, from revolutionary politics to the new machine age, war and depression to growth and prosperity, fashion dress and costume goes hand-in-hand with history. This course examines the evolution of dress and costume and finds innovation at every turn.

**SEPS 295. Topics. 1 Credit.**

Topics of current interest in the area of STEM Education and Professional Studies.

**SEPS 297. Observation and Participation. 1 Credit.**

1 credit. Prerequisite: sophomore standing. Students observe middle and/or high school classes for 30 clock hours. Assist teachers and students in practical settings. Relate principles and theories of education and specialty content to actual practice in the classrooms and schools. Attend seminars related to contemporary school practices. (qualifies as a CAP experience).

**SEPS 302. Workforce Supervision. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. Explores the skills and knowledge required of successful supervisors: leading, motivating, setting goals, delegating, budgeting, interviewing, negotiating, counseling, coaching, conducting meetings, and handling grievances.

**SEPS 303. Social Aspects of Clothing. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of instructor. A study of the social meaning of appearance, how it is established, how it is interpreted, and the importance of the social and cultural contexts in which these processes occur.

**SEPS 367. Cooperative Education. 1-3 Credits.**

1-3 credits (may be repeated for credit). Prerequisite: approval by the department and Career Management, in accordance with the policy for granting credit for Cooperative Education programs. Available for pass/fail grading only. Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and the Cooperative Education program prior to the semester in which the work experience is to take place. (qualifies as a CAP experience).

**SEPS 389. Education and Training of Adults. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. An in-depth overview of education and training of adults. Attention is given to adult learning theory and strategies for facilitating the learning process. Aspects of the course will focus on helping students understand and visualize jobs and careers in adult education and training.

**SEPS 395. Topics in Occupational Education. 1-3 Credits.**

1-3 credits. Prerequisite: permission of the instructor. The department offers selected topics designed to permit small groups of qualified students to work on subjects of mutual interest.

**SEPS 400/500. Instructional Systems Development. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. Students learn how to design and develop classroom instructional materials including career and technical education and training curricula and programs for youths and adults. Skills in this area include the selection and use of materials, including media and computers and evaluation of pupil performance. Training specialist students learn to develop instructional materials using the instructional systems design process. Career and technical education students learn to plan instruction, to implement competency-based and standards-based education, and to modify and use the Virginia career and technical education curriculum guides.

**SEPS 401/501. Foundations of Career and Technical Education. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. This course is designed to teach career and technical education majors to plan, develop, and administer a comprehensive program of career and technical education for high school students and adults. Students also develop an understanding of the historical and sociological foundations underlying the role, development and organization of public education in the United States.

**SEPS 402/502. Instructional Methods in Occupational Studies. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: SEPS 400. Designed to develop a student's ability to use basic instructional techniques and methods applicable to career and technical education, and adults in business, government, and industrial organizations. It involves videotaped micro-teaching demonstrations and presentations.

**SEPS 403/503. Methods in Career and Technical Education. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. A practical study and application of recommended methods of teaching career and technical education to high school students. Video-taped micro-teaching demonstrations are included. The course should be taken the semester prior to student teaching.

**SEPS 405. Directed Work Experience. 4 Credits.**

Student must be employed the summer prior to his/her senior year in an emphasis-related job approved by the instructor. The student work is supervised by a job supervisor and the course instructor in a cooperative effort. Must complete a job package that describes all aspects of the organization. (qualifies as a CAP experience). Prerequisite: junior standing.

**SEPS 408/508. Advanced Classroom Issues and Practices in Career and Technical Education. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: admission to an approved teacher education program. An overview of classroom issues and practices for prospective career and technical teachers. The course covers classroom management and safety, communication processes, reading in the content area and child abuse and neglect recognition and intervention. Students learn the legal requirements and alternative teaching strategies for serving students with special needs. Students visit schools for a 30-hour student observation. PRAXIS II and VCLA are course completion requirements.

**SEPS 409/509. Fashion Market Trip. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: SEPS 208. This is the study of planning and conducting a fashion buying trip to one of the major fashion markets in the United States like the Las Vegas Magic Trade Show. The students envision themselves as buyers in action and learn how trend forecasting and creative presentations help market fashion products and services to trade customers and consumers.

**SEPS 410/510. The Foreign Fashion Market Trip. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: SEPS 208. Students plan and conduct a fashion buying trip to a foreign market in Europe or Asia, and learn how to buy merchandise in the global marketplace. The course requires students to go on the trip as well as attend the pre- and post-trip classes.

**SEPS 415. Advanced Merchandising. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: SEPS 208 and ACCT 201. This course is designed for marketing education and fashion students. It includes advanced merchandising math concepts used in the merchandising industry. Topics include pricing and re-pricing merchandise, creating and analyzing six-month plans, maintaining inventory control, and solving problems that are typically experienced in the merchandising field.

**SEPS 422. Fashion Product Development. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: SEPS 208 and 220. Students work step-by-step through the preproduction processes of apparel product development: planning, forecasting, fabricating, developing silhouettes and specifications, pricing, and sourcing. The course demonstrates how these processes must be coordinated to get the right product to retail when consumers want it and at a price they are willing to pay.

**SEPS 423/523. Visual Merchandising and Display. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. This course is designed to introduce students to the best practices and effective strategies in visual merchandising. It will provide the basic framework with which prospective merchandisers plan and construct visual displays that enhance the selling of merchandise and ideas.

**SEPS 424/524. Fashion, Textiles, and Construction Analysis. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. This course explores information related to new technological advances in the textile/apparel industry and determines consumer preferences and concepts of fashion product quality. It includes the development of standards for judging qualities of merchandise. Fabrics are examined to determine the value they provide to the apparel and accessories customer.

**SEPS 430/530. Technology Applications in Training. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. This course is designed to prepare training professionals to plan and conduct training using technological applications. The course covers instructional technology skills, computer systems, and software that trainers need so that they can teach basic computer and information skills in business, industry and government.

**SEPS 431/531. Web-Based Organization for Fashion. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: STEM 251G or equivalent or permission of instructor. This course provides the basic communications foundations needed to conceive, plan, develop, implement, and maintain a Web-based organization for fashion. Upon completion, students will understand what is required to plan, launch and maintain a successful online venture, limited only by the willingness of the student to explore these technological advances.

**SEPS 435/535. Global Retailing. 3 Credits.**

This course examines globalization and the development of an integrated global economy. Primary emphasis is placed on the strategies for successful global business expansion for retailers in international markets. Prerequisites: SEPS 220 or SEPS 208.

**SEPS 440/540. Global Sourcing. 3 Credits.**

This course examines the role of global sourcing in the strategic positioning of retailers in the global economy. Emphasis is placed on economic, political, logistical, and ethical factors affecting world trade and global sourcing decisions. Prerequisite: SEPS 220 or SEPS 208.

**SEPS 450/550. Assessment, Evaluation and Improvement. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. This course prepares training and educational professionals to plan for and conduct assessments to use in planning instructional programs, evaluate individual learning, monitor student progress, measure program effectiveness and efficiency, and evaluate the return on investments of training courses and programs.

**SEPS 471/571. Communication Industries. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing and industrial technology major for 471. A course designed to provide career and technical education teachers, industrial technologists, counselors, and administrators an opportunity to observe and enhance their knowledge of representative communication industries from the local region. (qualifies as a CAP experience).

**SEPS 472/572. Construction Industries. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing and industrial technology major for 472. A course designed to provide career and technical education teachers, industrial technologists, counselors, and administrators an opportunity to observe and enhance their knowledge of representative construction industries from the local region. (qualifies as a CAP experience).

**SEPS 480. Senior Project: Merchandise Retailing. 3 Credits.**

A senior capstone course in which fashion and business knowledge and skills are applied to plan and implement a merchandise retailing business. Students must submit a professional quality written report and present results to a panel of consultants. Course to be taken final semester before graduation.

**SEPS 481. Occupational Career Transition. 3 Credits.**

To provide the senior-level student majoring in occupational and technical studies with the skills and techniques necessary to bridge the gap from college to career. Focus is on the generation of a professional portfolio and experiential learning that will transfer into today's job market. Prerequisites: Senior standing.

**SEPS 484/584. Student Teaching Mentored. 6-12 Credits.**

6-12 credits. Prerequisites: completion of the approved teacher education program in the major area, departmental approval, and permission of the director of teacher education services. Passing scores on PRAXIS I or State Board of Education-approved SAT or ACT scores and passing scores on the appropriate PRAXIS II content examination required. Classroom placement in school systems for students to apply content and methodologies. The student is mentored by a school mentor and university faculty. This course is for newly hired teachers on provisional contracts.

**SEPS 485. Student Teaching. 12 Credits.**

Five days per week, full semester; 12 credits. Prerequisites: completion of the approved teacher education program in the major area, departmental approval, passing scores on PRAXIS I or State Board of Education-approved SAT or ACT scores, passing scores on the appropriate PRAXIS II content examination, and permission of the director of teacher education services. Available for pass/fail grading only. (qualifies as a CAP experience).

**SEPS 486/586. Middle School Student Teaching for Technical Education. 6 Credits.**

6 credits. Prerequisites: STEM 305, 306, SEPS 408, SPED 313, TLED 408 and SEPS 450; or SEPS 508, 596, STEM 730, SEPS 788, TLED 608, 616, READ 680 for graduate students. Passing scores on PRAXIS I or State Board of Education-approved SAT or ACT scores and passing scores on the appropriate PRAXIS II content examination are required. Classroom placement for student teaching in a middle school technology laboratory. Students apply content and methodology under the supervision of a cooperating teacher and university faculty member. Available for pass/fail grading only. (qualifies as a CAP experience).

**SEPS 488. High School Student Teaching for Technical Education. 6 Credits.**

Classroom placement for student teaching in a high school technology laboratory. Students apply content and methodology under the supervision of a cooperating teacher and university faculty member. Available for pass/fail grading only. (qualifies as a CAP experience) Prerequisites: STEM 305, 306, SEPS 408, SPED 313, TLED 408, SEPS 450, passing scores on PRAXIS I or State Board of Education-approved SAT or ACT scores, and passing scores on the appropriate PRAXIS II content examination.

**SEPS 495/595. Topics in Occupational Education. 1-3 Credits.**

1-3 credits each semester. Prerequisite: permission of the instructor. The department offers selected topics designed to permit small groups of qualified students to work in subjects of mutual interest which, due to their specialized nature, may not be offered regularly.

**SEPS 496/596. Topics in Career and Technical Education. 1-3 Credits.**

The department offers selected topics designed to permit small groups of qualified students to work in subjects of mutual interest which, due to their specialized nature, may not be offered regularly. Prerequisites: permission of the instructor.

**SEPS 497/597. Independent Study in Occupational Education. 1-6 Credits.**

1-6 credits. Prerequisite: permission of the instructor.

**SEPS 498. Independent Study in Occupational Education. 1-6 Credits.**

1-6 credits. Prerequisite: permission of the instructor.

## **SMGT - Sport Management**

### **SPORT MANAGEMENT Courses**

**SMGT 214. Introduction to Sport Management. 3 Credits.**

Course will introduce students to the sport industry, the wide range of career opportunities involving sport, and the economic impact of sports in America. Prerequisites: A grade of C- or better in MATH 102M or MATH 162M.

**SMGT 305. Sport Administrative Theory. 3 Credits.**

Principles of organization and administration as they apply to managing sport organizations. Issues related to working with and through individuals to achieve organizational goals and objectives are discussed. Prerequisites: SMGT 214 with a grade of at least C-.

**SMGT 312. Sport Sales. 3 Credits.**

This course will teach students to learn and navigate the sport sales process. The financial strength of a sport entity is determined by its sales ability, and through lecture, guest speakers, and applied 'real world' exercises, students will have the opportunity to obtain knowledge, skills, and experiences in sport sales that are essential for entry level positions. Prerequisites: A grade of C- or better in SMGT 214, junior standing or permission of the instructor.

**SMGT 315. Sport Media and Public Relations. 3 Credits.**

An introduction to sport media and public relations. Special emphasis will be placed on the communications process in sport and the various mediums that can be used to convey messages. The internal and external publics involved in sport public relations will be examined along with the steps involved in the process. Prerequisite: SMGT 214 with a grade of at least C- and a grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C.

**SMGT 331. Fiscal Planning and Management in Sport and Recreation. 3 Credits.**

This course is designed to examine the principles and practices of financial management in diverse recreation and sport service settings. Course will explore the basic concepts of financial planning and analysis to effectively manage a successful operation. Prerequisites: SMGT 214 with a grade of C- or higher, ACCT 201, and MATH 102M or higher.

**SMGT 366. Internship Seminar. 1 Credit.**

Agency field placement is required of all students in Sport Management. Seminar will include resume and cover letter writing skills, internship requirements, agency placement referrals, and interviewing techniques. (qualifies as a CAP experience) Prerequisites: all emphasis core courses and junior standing.

**SMGT 368. Internship. 12 Credits.**

Final field placement required for all students with an emphasis in sport management. Students will be placed in an agency to gain experience in methodologies, administration techniques, and programs specific to their area of emphasis. Minimum of 400 clock hours. (qualifies as a CAP experience) Prerequisites: A grade of C- or better in SMGT 214; senior standing, permission of the instructor, and completion of all required courses in appropriate emphasis areas.

**SMGT 369. Practicum in Physical Education, Recreation, and Athletics. 3 Credits.**

Selected off-campus experiences in physical education, leisure activities, and athletics that will enable students to become more actively involved with field-based professionals engaged in skills within their respective discipline. (qualifies as a CAP experience) Prerequisites: permission of the instructor and a grade of C- or better in SMGT 214.

**SMGT 414. Sport Marketing. 3 Credits.**

Course will examine competitive market strategies as they apply to the sport industry. Emphasis will be placed on the relationship between sport products and sport markets, the communication mix, market research, and the role of strategic planning for business sponsorship. Prerequisites: SMGT 214 with a grade of C- or better and junior standing.

**SMGT 415. Principles of Coaching Management. 3 Credits.**

This course is designed to provide students with a basic knowledge of the coaching profession. Special emphasis will be placed on establishing a sound coaching philosophy, selecting a coaching style, desirable qualities of a coach, ethics and the coach, roles of the head coach, planning and organizing for games and practices, coaching pedagogy, off-season planning, final preparations for the season, and issues and problems related to coaching and recruiting athletes. Prerequisites: junior standing.

**SMGT 421. Legal Aspects in Recreation and Sport Management. 3 Credits.**

This course presents an overview of the increasing effect the law is having on amateur athletics, professional sports and recreation programs. Prerequisites: SMGT 214 with a grade of C- or better and junior standing.

**SMGT 432. Sport Facility and Event Management. 3 Credits.**

This course provides an examination of the principles and practices of sport facility and event management. Special emphasis will be placed on management functions related to facility planning and supervision, financing, site design, public relations, security, operations, maintenance, programming, box office operations and concessions. This course is designed to introduce students to principles and practices of planning, budgeting, operating, scheduling, managing, and evaluating events in the sport industry. Students will acquire an in-depth knowledge about the specialized field of event management and become familiar with management techniques and strategies required for successful promotion, implementation and evaluation of special events within a sport context. Prerequisites: SMGT 214 with a grade of C- or better and junior standing.

**SMGT 450W. Ethics and Morality in Sport. 3 Credits.**

This writing intensive course offers an introduction to ethics and morality within the context of sports. It examines the values of sport and the basis for ethical decision making. Readings, case studies and class discussion are used to explore the moral significance of sport. This course is designed to foster critical thinking skills and to improve written and verbal communication skills through analysis of philosophical and ethical issues associated with sport. Prerequisites: SMGT 214 with a grade of C- or better, a grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C and Junior standing.

**SMGT 452. Sport Facility Management. 3 Credits.**

An examination of the principles and practices of sport facility management. Special emphasis will be placed on management functions related to facility supervision, financing, marketing, public relations, risk management, security, operations, maintenance, programming, scheduling, event planning, box office operations and concessions. Prerequisites: A grade of C- or better in SMGT 214 and junior standing.

**SMGT 453. Event Management and Sport Sponsorship. 3 Credits.**

This course is designed to provide a detailed examination of the relationship between sport and corporate sponsorship. Topics will include sport sponsorship background and history, reasons for sponsorship, benefits of sponsorship, types of sport sponsorship, strategic communication through sponsorship, sponsorship valuation, and evaluation of sponsorship packages. Special emphasis will be placed on the relationship between sport sponsorship development, event planning and fund-raising strategies. Prerequisites: A grade of C- or better in SMGT 214 and junior standing.

**SMGT 455. Sport in Contemporary Society. 3 Credits.**

Discusses the phenomenon of sport as it represents one of the most pervasive social institutions today. The major theme of this course is to demonstrate how sport reflects and enforces the beliefs, values, and ideologies of society. Emphasis is placed on changing attitudes and current trends in the world of sport. The course will be taught from sociological and philosophical perspectives. Prerequisites: A grade of C- or better in SMGT 214 and junior standing.

**SMGT 456/556. Sport Psychology. 3 Credits.**

This course examines psychological theories and research related to sport and exercise behavior. The course is designed to introduce students to the field by providing a broad overview of topics associated with sport and exercise psychology. Prerequisites: A grade of C- or better in SMGT 214 and junior standing.

**SMGT 495. Topics in Sport Management. 3 Credits.**

This course provides an opportunity for in-depth study of selected topics in sport management. Prerequisites: Junior standing or permission of the instructor.

**SMGT 497. Independent Study in Sport Management. 1-3 Credits.**

Individualized instruction to include research, specialized studies, or other scholarly writing. Prerequisites: Permission of the instructor.

## SOC - Sociology

### SOCIOLOGY Courses

**SOC 201S. Introduction to Sociology. 3 Credits.**

An introduction to the discipline and methods of sociology. Major topics include socialization, social inequality, family, education, gender roles, ethnic and minority relations.

**SOC 226S. Honors: Introduction to Sociology. 3 Credits.**

Open only to students in the Honors College. A special honors section of SOC 201S.

**SOC 300. Social Problems. 3 Credits.**

An analysis of the major social problems confronting groups and individuals in a society marked by rapid change. Emphasis is given to the study of social phenomena including both historical and comparative perspectives. Prerequisites: SOC 201S or permission of the instructor.

**SOC 303. Introduction to Marriage and the Family. 3 Credits.**

A wide variety of topics are covered, including gender-role socialization, dating, premarital sex, power, negotiation, conflict and violence as well as satisfaction in relationships, singlehood, cohabitation, commuter and dual-career relationships, and relationship dissolution. Prerequisites: SOC 201S or permission of the instructor.

**SOC 306. Religion and Society. 3 Credits.**

Sociological analysis of religion as a social institution, of the functions of religion and its relationship to other institutions and to social change, and of the religious behavior of individuals. Prerequisites: SOC 201S or permission of the instructor.

**SOC 309. Population and Society. 3 Credits.**

This course offers an introduction to the field of population and its interconnection to broader societal changes. It introduces students to the concepts, issues and concerns in population studies and examines the interaction between population processes and economic development, social changes and environment. Topics include theories, fertility, mortality, migration, distribution and composition, population and development, population and environment, and policy. Emphasis is given to a critical assessment of population processes as both causes and consequences of development and societal changes with a focus on comparative patterns between developing countries and the more developed countries. Prerequisites: Six semester hours in human behavior or permission of the instructor.

**SOC 316. Juvenile Delinquency. 3 Credits.**

A study of juvenile misbehavior in the contemporary community, its nature, extent, treatment, and control, including juvenile court procedure and philosophy. Prerequisites: CRJS 215S or SOC 201S or permission of instructor.

**SOC 320. Social Inequality. 3 Credits.**

An analysis of social differentiation, stratification, and social class. Emphasis is placed upon modern American society, with some comparison with historical and contemporary systems of other societies. Prerequisites: SOC 201S or permission of the instructor.

**SOC 323. Sociology of Minority Families. 3 Credits.**

Examination and explanation of minority families' lives in relationship to other societal institutions and historical developments. The course focuses on issues of minority families and places these issues in a sociological framework, e.g., stratification, poverty and gender. Prerequisites: SOC 201S or permission of the instructor.

**SOC 325. Social Welfare. 3 Credits.**

An introduction to the broad field of social welfare. The philosophy, values, purposes, goals, and functions of social welfare are examined. Prerequisites: SOC 201S or permission of the instructor.

**SOC 330. Society and the Individual. 3 Credits.**

Social psychological theory and research on current topics of interest on the relationship of the individual to society. Prerequisites: SOC 201S or permission of the instructor.

**SOC 337. Introduction to Social Research. 3 Credits.**

An overview of the scientific approach to the study of social phenomena. Includes the application of descriptive measures, graphic techniques, survey and experimental analysis to the study of these phenomena and techniques for making qualitative judgements about such research. Prerequisites: CRJS 215S or SOC 201S.

**SOC 340. Sociology of Women. 3 Credits.**

An exploration of the role and status of women in contemporary American society from a feminist sociological perspective. Prerequisites: SOC 201S or six credits in human behavior or permission of the instructor.

**SOC 342. Feminist Research Methods. 3 Credits.**

An introduction to feminist critiques of mainstream social science research methods and to feminist approaches to social science research as applied to current issues pertaining to women. Prerequisites: WMST 201S and an introductory human behavior research methods course or permission of the instructor.

**SOC 343. Sociology of Sexuality. 3 Credits.**

Study of the sociological research and theory on sexuality. Wide range of issues covered including childhood sexuality and arousal, premarital sex, adult erotic behavior, response to pornography, rape and incest. Prerequisites: SOC 201S.

**SOC 344. Social Science and Crime Mapping. 3 Credits.**

A critical exploration of applying geographic information system (GIS) to view, understand, question, interpret, and visualize social science and crime data that reveal relationships, patterns, and trends. Students will learn to 1) frame a research question or hypothesis from a location-based perspective; 2) collect, create and examine geographically referenced demographic, social, and criminological data; 3) learn to use GIS mapping software to visualize, manage and analyze this data in order to investigate the relationship between geographic, demographic, social and criminological variables; and 4) arrive upon decisions and conclusions and communicate these via the creation of publishable maps. Prerequisite: SOC 201S or CRJS 215S or permission of the instructor.

**SOC 345. Philippine Society & Culture. 3 Credits.**

This course examines the social forces that shape the Philippines and their impact on the country's social, cultural, economic and political development. Prerequisites: SOC 201S or permission of the instructor.

**SOC 346. The Filipino American Community. 3 Credits.**

The course examines the histories, lived experiences, cultures, identities, and contributions of Filipino Americans. Using multiple theoretical perspectives it explores the intersection of class, race/ethnicity, gender, and specific immigration circumstances and historical background that are paramount in the community. Prerequisites: SOC 201S or permission of the instructor.

**SOC 352. War and Peace. 3 Credits.**

Critical examination of the social problem of war and the social construction of peace. The course includes investigations into the etiology of war and the effects of war on society, as well as, the relationships between war, peace, and justice, and methods of reducing war and promoting peace. Prerequisites: Six hours of human behavior courses or permission of the instructor.

**SOC 353. Sociology of the Middle East. 3 Credits.**

A comparative survey of population and culture and other sociological characteristics of Middle Eastern and Arab League States. Prerequisites: SOC 201S or six hours of human behavior or permission of the instructor.

**SOC 367. Cooperative Education. 1-3 Credits.**

Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and Career Management prior to the semester in which the work experience is to take place. (Qualifies as a CAP experience.) Prerequisites: Approval of the department and Career Management.

**SOC 368. Internship. 1-6 Credits.**

This course allows students to volunteer in an agency related to their major for pass/fail credit. Students must volunteer for 50 hours per course credit. Internships for fewer than 3 credits require prior approval by the Internship Faculty Director. (Qualifies as a CAP experience.) Prerequisites: Permission of the department internship director.

**SOC 369. Practicum. 3-6 Credits.**

This course is for students participating in the Career Advantage Program. (Qualifies as a CAP experience.) Prerequisites: Permission of the department.

**SOC 395. Topics in Sociology. 3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisites: SOC 201S or permission of the instructor.

**SOC 396. Topics in Sociology. 3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisites: SOC 201S or permission of the instructor.

**SOC 400/500. War and Gender. 3 Credits.**

In this course students grapple with issues concerning war, gender roles, and gender inequality. The course addresses gender roles in war throughout history, globally and across cultures. However, the United States military and military involvement in the 20th and 21st century remain the primary focus areas. Discussions include how social norms and ideals of masculinity and femininity shape, and in turn are shaped by, images and realities of war, including gendered aspects of nationalism and just war theories. The military involvement of men, women (and children) in war and in peacetime, as participants and observers, perpetrators and victims, supporters and opponents of war is also discussed. Prerequisites: SOC 201S and junior standing.

**SOC 402/502. Sociology of Child Welfare. 3 Credits.**

A sociological analysis of the field of child welfare. Topics include social inequality as it applies to children as a group in the U.S. and globally; understanding violence against children within the global context of children's rights; examining data on the degree to which policies, programs and research in the field fail to protect children and why; prevalence, causes and consequences of child sexual, physical and emotional abuse and neglect; evaluation of programs like "family preservation" and of placement in "substitute" care, i.e., foster care, adoption, institutionalization; changes that would protect and advance the interests and rights of children at the parent-child, agency, and societal level. Prerequisites: SOC 201S.

**SOC 403. Violence in the World of Children. 3 Credits.**

This 'child-centered' course examines the interaction of adults in violent conflict with the world of children, children's experience of violence and its meaning in the lives of children. Topics include: valuing children, violence toward children in culture, families, and schools; child physical and sexual abuse and neglect; gangs, violent communities, and children and war. The effects of childhood experiences of violence, children's coping with violence, and alternatives to violence are also developed. Prerequisites: Six hours in the human behavior perspective or SOC 201S or CRJS 215S or permission of the instructor.

**SOC 405/505. Social Change and Social Movements. 3 Credits.**

Analysis of the nature and causes of social change, major social movements, and their impact upon contemporary society. Prerequisites: SOC 201S or permission of the instructor.

**SOC 408. Children's Rights and the Law. 3 Credits.**

A study of the law concerning children from a children's rights perspective. The rights of children in the US will be compared to other nations with special emphasis being placed on the UN Convention on the Rights of the Child. Prerequisites: SOC 201S OR CRJS 215S or related human behavior Way of Knowing or permission of the instructor.

**SOC 409W. Sociological Theory. 3 Credits.**

The development of sociological thought during the nineteenth and twentieth centuries. Analysis of major contributions to the development of systematic thinking in contemporary sociology. (This is a writing intensive course.) Prerequisites: SOC 201S and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**SOC 415. Sociology of Work and Occupations. 3 Credits.**

The study of the social processes involved in the production, distribution, and consumption of goods and services within various political economic systems. Includes the study of occupations and the nature of work. Prerequisites: SOC 201S or permission of the instructor.

**SOC 418. Crime, Society and the Media. 3 Credits.**

A critical exploration of media portrayals of crime and criminal justice. News and entertainment genres are examined. Connections between the mass media and crime, culture, politics, society, and individual behavior receive special attention. (cross listed with CRJS 418) Prerequisite: SOC 201S or CRJS 215S or permission of the instructor.

**SOC 421/521. Deviant Behavior. 3 Credits.**

A study of various definitions and forms of deviant behavior, theoretical explanations of causes of deviant behavior and the impact of deviant behavior on society and the individual. Prerequisites: SOC 201S or CRJS 215S or permission of the instructor.

**SOC 423/523. Women, Health and Healing. 3 Credits.**

An examination of women's experiences with health and illness and women's roles in the health-care system as patients and care providers from a feminist sociological perspective. Prerequisites: Six hours of human behavior courses or permission of the instructor.

**SOC 426/526. The Sociology of Minority Groups. 3 Credits.**

The study of the process of and responses to the oppression of racial, religious, ethnic, and national minorities in a variety of countries within a historical and comparative perspective. Special emphasis given to American minorities and especially African Americans. Prerequisites: SOC 201S or permission of the instructor.

**SOC 427/527. Violence Against Women. 3 Credits.**

A critical analysis of violence against women as an institution of social control. Examines violence in the context of social and political inequality and feminist critique. Issues explored include pornography, prostitution, sexual harassment, incest, battering and rape. Prerequisites: SOC 201S or CRJS 215S or permission of the instructor.

**SOC 436. Capstone Research Project. 3 Credits.**

Students work in groups to plan, design, and carry out a research project. Final papers which report the results of the study are presented in a formal research seminar. The projects are to reflect knowledge gained from undergraduate work and training received in STAT 130M and SOC 337. Prerequisites: SOC 337 and STAT 130M and senior status.

**SOC 438. Sociology of Education. 3 Credits.**

Sociological theory and research investigating contemporary education as a social institution. Prerequisites: SOC 201S or permission of the instructor.

**SOC 440/540. Health, Illness, and Society. 3 Credits.**

The study of social and social-psychological factors related to health, illness, and treatment with a focus on social epidemiology, the medical industry, and health, illness, and sick-role behavior. Prerequisites: Six hours in human behavior or permission of the instructor.

**SOC 441/541. Drugs and Society. 3 Credits.**

The study of sociological and social psychological explanations of drug-using behaviors and of legal and medical control of drugs. Topics include changes in the legal status of drugs, cross-cultural and historical variations in the control and use of drugs, and social epidemiology of drug use in contemporary society. Prerequisites: SOC 201S or CRJS 215S or permission of the instructor.

**SOC 444. Community Justice. 3 Credits.**

This is a service learning course designed to study how the emerging field of community justice, a neighborhood-based strategy, can reduce crime and improve public safety by investing in social, human and cultural capital. Prerequisites: SOC 201S or CRJS 215S.

**SOC 446. Social Issues Across the Life Cycle. 3 Credits.**

This course focuses on age stratification across the life cycle. An analysis of social forces and issues affecting lives at various stages of the life cycle is offered. Prerequisites: Six hours in sociology or permission of the instructor.

**SOC 452. Diversity in Criminal Justice Organizations. 3 Credits.**

This course examines the impact of diversity, culture, and ethnic origin in criminal justice organizations. The course is designed to better prepare students to meet the challenge of diversity in criminal justice organizations. Prerequisites: SOC 201S or CRJS 215S or permission of instructor.

**SOC 495/595. Topics in Sociology. 3 Credits.**

The advanced study of selected topics designed to permit students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisites: SOC 201S or permission of the instructor.

**SOC 496/596. Topics in Sociology. 3 Credits.**

The advanced study of selected topics designed to permit students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors. Prerequisites: SOC 201S or permission of the instructor.

**SOC 497/597. Tutorial Work in Special Topics in Sociology. 1-3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: Senior standing and approval of the department chair.

**SOC 498/598. Tutorial Work in Special Topics in Sociology. 1-3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: Senior standing and approval of the department chair.

## SPAN - Spanish

### SPANISH Courses

**SPAN 101F. Beginning Spanish I. 3 Credits.**

101F is prerequisite to 102F. Lecture 3 hours; 3 credits each semester. An introduction to the Spanish language providing a foundation in listening, speaking, reading, writing and culture. Weekly attendance in language laboratory is required in addition to the classroom meetings.

**SPAN 102F. Beginning Spanish II. 3 Credits.**

101F is prerequisite to 102F. Lecture 3 hours; 3 credits each semester. An introduction to the Spanish language providing a foundation in listening, speaking, reading, writing and culture. Weekly attendance in language laboratory is required in addition to the classroom meetings.

**SPAN 121F. Intensive Beginning Spanish. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: at least three years of high school Spanish and placement test. This course is designed for students who have had significant experience in the study of Spanish but do not place in the second year of the program.

**SPAN 195. Topics in Spanish. 1-3 Credits.**

1-3 credits. A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**SPAN 196. Topics in Spanish. 1-3 Credits.**

1-3 credits. A study of selected topics designed as electives for non-majors. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**SPAN 201. Intermediate Spanish I. 3 Credits.**

Lecture 3 hours; 3 credits each semester. Prerequisite: SPAN 102F or 121F or advanced placement for 201; SPAN 201 or advanced placement for 202. 201 builds on concepts taught in 101F-102F with considerable emphasis on culture through discussion, reading and writing in Spanish. 202 focuses more attention on writing, listening and conversational skills. The culture component continues with readings which may include literary pieces.

**SPAN 202. Intermediate Spanish II. 3 Credits.**

Lecture 3 hours; 3 credits each semester. Prerequisite: SPAN 102F or 121F or advanced placement for 201; SPAN 201 or advanced placement for 202. 201 builds on concepts taught in 101F-102F with considerable emphasis on culture through discussion, reading and writing in Spanish. 202 focuses more attention on writing, listening and conversational skills. The culture component continues with readings which may include literary pieces.

**SPAN 221. Intensive Intermediate Spanish. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: SPAN 121F or advanced placement or permission of the instructor. This accelerated course is designed for students who have successfully completed Spanish 121F or have scores above the Spanish 201 level but below the 300 level on the Spanish placement test. Students completing this course will have completed the foreign language requirement through the 202 level.

**SPAN 266. Spanish for Health Professions. 3 Credits.**

Lecture 3 hours, 3 credits. Prerequisites: SPAN 101F and 102F or 121F or 3 years of Spanish at the secondary level. This course seeks to develop Spanish language abilities for students involved in the health professions, i.e., medical fields, dentistry, physical therapy, etc. Although this course develops all skill areas (reading, writing, speaking, listening), it will concentrate on the development of oral communication and the cultural issues facing professionals and Spanish-speaking patients.

**SPAN 295. Topics in Spanish. 1-3 Credits.**

1-3 credits each semester. Prerequisite: none. A study of selected topics designed as electives for nonmajors. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**SPAN 296. Topics in Spanish. 1-3 Credits.**

1-3 credits each semester. Prerequisite: none. A study of selected topics designed as electives for nonmajors. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**SPAN 310. Advanced Grammar Review. 3 Credits.**

Objective of course is to improve the student's knowledge of Spanish grammar and syntax through the review of grammatical rules and their application. The course is required for majors or minors of Spanish having received a C or lower in SPAN 202. All Spanish majors and minors may take the course for review. Prerequisites: SPAN 202 or placement through testing.

**SPAN 311. Communicative Competence: Speaking and Listening. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: a grade of C or better in SPAN 202 or advanced placement. Development of speaking and listening skills using a variety of task-oriented strategies enabling students to become full conversational partners. (Oral Communication Course).

**SPAN 312W. Communicative Competence: Reading and Writing. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: A grade of C or better in ENGL 211C or 221C or 231C; passing score on the Writing Sample Placement Test; and a grade of C or better in SPAN 202 or advanced placement. A functional approach to the development of reading and writing skills targeting a variety of subjects, styles, and audiences. (This is a writing intensive course.)

**SPAN 320. Spanish Culture and Civilization. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: SPAN 311 and 312W with a grade of C or better. A survey of Spanish civilization from the Roman occupation of the Iberian Peninsula to the present day with emphasis on the political and social development of Spain.

**SPAN 321. Latin American Culture and Civilization. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: SPAN 311 and 312W with a grade of C or better. A course designed to introduce the student to the basics of Latin American civilization through a close study of its politics, art, literature, film and other related areas.

**SPAN 331. Introduction to Spanish Literature: Medieval to 1700. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: SPAN 311 and 312W with a grade of C or better. This survey course introduces students to the literary tradition of medieval and Golden Age Spain. In addition to reading the prose, poetry and theater of the most prominent writers of this period, students will learn critical terminology for talking about literature. Course objectives are for students to be able to do the following: read, analyze, compare, and critically discuss works of literature in Spanish; characterize various literary periods and movements of the 13th-17th centuries; and relate the texts read in class to their corresponding historical contexts.

**SPAN 332. Introduction to Spanish Literature: 1700 to Present. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: SPAN 311 and 312W with a grade of C or better. The course offers an overview of the literature of Spain from the mid-1700s to the present. Students will read works of prose, poetry and theater of the most prominent writers of these centuries, along with background material in order to become familiar with literary periods and their historical contexts. Course objectives are for students to be able to do the following: read, analyze, compare, and critically discuss works of literature in Spanish; characterize various literary periods and movements of the 18th-20th centuries; and relate the texts read in class to their corresponding historical contexts.

**SPAN 333. Introduction to Early Latin American Literature. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: SPAN 311 and 312W with a grade of C or better. A panoramic study of Spanish American literature from its origins in pre-Columbian indigenous literature through the essayists of the Spanish conquest, the colonial writers of the seventeenth and eighteenth centuries, the Romantics and Realists to the Modernists. Students will read works of prose, poetry and theater of the most prominent writers of these centuries, along with background material in order to become familiar with literary periods and their historical contexts. Course objectives are for students to be able to do the following: read, analyze, compare, and critically discuss works of literature in Spanish; characterize various literary periods and movements of the 16th-18th centuries; and relate the texts read in class to their corresponding historical contexts.

**SPAN 334. Introduction to Modern Latin American Literature. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: SPAN 311 and 312W with a grade of C or better. A panoramic study of Spanish American literature from Modernists to the post-Modernists to the contemporary novelists, short story writers, poets and dramatists. A panoramic study of Spanish American literature from Modernists to the post-Modernists to the contemporary novelists, short story writers, poets and dramatists. Students will read works of prose, poetry and theater of the most prominent writers of these centuries, along with background material in order to become familiar with literary periods and their historical contexts. Course objectives are for students to be able to do the following: read, analyze, compare, and critically discuss works of literature in Spanish; characterize various literary periods and movements of the 18th-20th centuries; and relate the texts read in class to their corresponding historical contexts.

**SPAN 366. Business Spanish: Language and Culture. 3 Credits.**

SPAN 366. Business Spanish: Language and Culture. Lecture 3 hours; 3 credits. Prerequisites: SPAN 311 and 312W or permission of instructor. A situation-based language course focusing on grammar, vocabulary, and conversation in culturally relevant business contexts.

**SPAN 369. Practicum. 1-3 Credits.**

1-3 credits. Prerequisite: nine credit hours at the 300 or 400 level. Internships in private and public organizations that provide an opportunity for students to apply and enhance language skills or cultural knowledge in a workplace setting. (qualifies as a CAP experience).

**SPAN 395. Topics in Spanish. 1-3 Credits.**

1-3 credits each semester. Prerequisite: SPAN 202 or the equivalent. A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**SPAN 396. Topics in Spanish. 1-3 Credits.**

1-3 credits each semester. Prerequisite: SPAN 202 or the equivalent. A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**SPAN 407/507. Advanced Grammar and Syntax. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: 9 hours of 300-level Spanish courses. Designed to refine competence in grammar and style in the process of writing various types of essays.

**SPAN 410/510. Spanish Applied Linguistics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: 9 hours of 300-level Spanish courses. Course is an introduction to Spanish linguistics and its application to the teaching and learning of Spanish. Topics include Spanish syntax, semantics, phonetics, and pragmatics and their practical applications to language learning.

**SPAN 415/515. Spanish Phonetics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: 9 hours of 300-level Spanish courses. A study of the sound system of Spanish from both theoretical and applied perspectives. Intensive practice in pronunciation and contrastive analysis of Spanish and English.

**SPAN 447/547. Drama of the Spanish Golden Age. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: 9 hours of 300-level Spanish courses. A study of selected works of the major playwrights of the Golden Age: Lope de Vega, Calderon de la Barca, Tirso de Molina, Ruiz de Alarcon.

**SPAN 448/548. Contemporary Spanish Drama. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: 9 hours of 300-level Spanish courses. A study of contemporary Spanish playwrights since Federico Garcia Lorca.

**SPAN 449/549. Contemporary Spanish-American Drama. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: 9 hours of 300-level Spanish courses. A study of contemporary Spanish-American drama through the reading of representative authors.

**SPAN 450/550. Contemporary Peninsular Narrative. 3 Credits.**

Lecture, 3 hours; 3 credits. Prerequisites: SPAN 311, 312W and (SPAN 331 or 332 or 333 or 334). Study of contemporary peninsular narrative works (novel, essay and some short story) within the Spanish social, political and cultural context of the last 40 years (1970-2012).

**SPAN 451/551. Contemporary Latin American Narrative. 3 Credits.**

Lecture, 3 hours. 3 credits. Prerequisites: SPAN 311, 312W and (SPAN 331 or 332 or 333 or 334). Study of contemporary Latin American narrative works (novel, essay and some short story) within the Spanish social, political and cultural context since the 1920's.

**SPAN 452/552. Latin American Poetry. 3 Credits.**

Basic comprehension about representative works of Spanish American poetry after Ruben Dario and their influences on contemporary culture. Prerequisites: SPAN 311, SPAN 312W, and one 300-level SPAN literature course.

**SPAN 453/553. Border Culture and Literature. 3 Credits.**

Lecture, 3 hours. 3 credits. Prerequisites: SPAN 311, 312W and one from SPAN 331, 332, 333, or 334. Study of variety of current texts from the U.S. and Mexico, this course will explore the multiplicity of images that surround and define the highly contested and increasingly important area of the border. Course will focus on questions dealing with subaltern identities such as women, indigenous groups, immigrants, and the poor.

**SPAN 469/569. Hispanic Film. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: 9 hours of 300-level Spanish courses. A topical study of the major works of Spanish and Latin American film from Buneul to the present. The course will explore many issues, including those related to gender, race, symbolism, and class struggle. (cross-listed with COMM 443/543).

**SPAN 471/571. Hispanic Women Authors. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: 9 hours of 300-level Spanish courses. A study of fictional and non-fictional works by Spanish, Spanish-American, and U.S. Latina writers from the 16th to the 20th century. The course analyzes gender identity and roles and the interaction of gender, race, and class in literary representations of courtship and marriage, spirituality, nationalism, colonialism, and multiculturalism.

**SPAN 473/573. Contemporary Latina Literature: From Borders to Crossroads. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: 9 hours of 300-level Spanish courses. The course focuses on poetry, prose fiction and theater written by Chicana, Puerto Rican, Cuban-American, and Dominican-American women authors in the last twenty years. Attention will also be paid to the very influential theoretical work written by Chicanas.

**SPAN 475W. Spanish Senior Research Seminar. 3 Credits.**

Seminar, 3 hours; 3 credits. Prerequisite: Senior standing and a grade of C or better in ENGL 211C or 221C or 231C. Course is designed to provide Spanish majors with a small group setting that facilitates in-depth discussion of key concepts of critical theory, literary studies, and the discipline. The seminar will encourage students to research and explore relevant topics related to Hispanic literature and the arts and experiment with the application of the different concepts under discussion. (This is a writing intensive course.).

**SPAN 495/595. Topics in Spanish. 1-3 Credits.**

1-3 credits each semester. Prerequisite: 9 hours of 300-level Spanish courses. The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**SPAN 496/596. Topics in Spanish. 1-3 Credits.**

1-3 credits each semester. Prerequisite: 9 hours of 300-level Spanish courses. The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule booklet, and will be more fully described in a booklet distributed to all academic advisors.

**SPAN 497. Tutorial Work in Special Topics in Spanish. 1-3 Credits.**

1-3 credits each semester. Prerequisites: 9 hours of 300-level Spanish courses. Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

**SPAN 498. Tutorial Work in Special Topics in Spanish. 1-3 Credits.**

1-3 credits each semester. Prerequisites: 9 hours of 300-level Spanish courses. Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate.

## SPED - Special Education

### SPECIAL EDUCATION Courses

**SPED 313. Fundamentals of Human Growth and Development: Birth through Adolescence. 3 Credits.**

This course will contribute to an understanding of the physical, social, emotional, and intellectual development of children and adolescents and the ability to use this understanding in guiding learning experiences. The interaction of children and adolescents with economic, social, racial, ethnic, religious, physical and intellectual differences will be explored. Developmental issues related to giftedness or disability and the impact of family disruptions, child abuse and substance abuse are included. Prerequisites: junior standing.

**SPED 400/500. Foundations of Special Education: Legal Aspects and Characteristics. 3 Credits.**

The course provides an introduction and overview of the field of special education from the perspective that it is a subsection of general education and that the field is in transition by virtue of philosophical, legislative and programmatic changes. Legal aspects, regulatory requirements, and critical analyses of research are addressed. This course includes a broad overview of the expectations associated with the identification, characteristics, and education of students with disabilities. Prerequisites: junior standing.

**SPED 402/502. Instructional Design I: Learner Characteristics and Assessment. 3 Credits.**

The intent of this course is to provide pre-service teachers with: (a) knowledge of the characteristics of students with mild disabilities who are accessing the general curriculum, K-12, including, but not limited to learning disabilities, emotional disabilities and intellectual disabilities and (b) the ability to develop knowledge and skill in the selection, administration, scoring and interpretation of standardized/norm-referenced assessments of exceptional learners. Administering formal and informal assessment tools and the development of an IEP are emphasized. The use of assessment data to improve instruction and student performance is discussed. Prerequisites: SPED 400/SPED 500.

**SPED 403/503. Directed Field Experience in Special Education. 2 Credits.**

This course provides variable hours of direct participation in a community or educational setting with individuals with special needs. The course includes specific skills of program planning, implementation, evaluation and classroom management. Practicum of 45 hours required. Corequisite: SPED 483. Prerequisites: SPED 400/SPED 500 and SPED 402/SPED 502 and passing scores on Praxis Core Academic Skill for Educator Tests or equivalent.



**SPED 404/504. Characteristics and Medical Aspects of Disabling Conditions. 3 Credits.**

This course reviews medical conditions present among individuals with disabilities and implications for classroom instruction. Prerequisites: SPED 400/SPED 500 and junior standing.

**SPED 406/506. Students with Diverse Learning Needs in the General Education Classroom. 3 Credits.**

This course introduces general education teachers to the legal aspects and educational needs of at-risk students and those with disabilities. Emphasis is on characteristics of children with special needs and procedures for effective academic, behavioral, and social integration of these children in the general education classroom. Prerequisites: junior standing.

**SPED 411/511. Classroom and Behavioral Management Techniques for Students with Diverse Needs. 3 Credits.**

This course will address classroom management techniques and individual interventions based upon behavioral, cognitive, affective, social, and ecological theory and practice. The course will focus on the field of applied behavior analysis, including best practices in the areas of data collection, program selection, program implementation, and data analysis. Positive behavior management and supports and functional behavioral assessment will be emphasized. Pre- or corequisite: SPED 400/SPED 500.

**SPED 415/515. Instructional Design II: Curricular Procedures and Individualized Education Planning. 3 Credits.**

The intent of this course is to provide preservice teachers with: (a) knowledge of research-based instruction for K-12 students with disabilities and those who are gifted; (b) knowledge and skill in using data collection to make decisions about student progress, instruction, program, accommodations and teaching methodology for exceptional learners, and (c) knowledge and skill in planning, developing and implementing individual educational plans and group instruction for diverse exceptional learners who are accessing the general education curriculum and the Virginia Standards of Learning. Practicum in an elementary-level setting is required. Practicum of 45 hours required. Prerequisites: SPED 400/SPED 500, SPED 402/SPED 502, and passing scores on Praxis Core Academic Skills for Educator Tests or equivalent as prescribed by the Virginia Board of Education.

**SPED 417/517. Collaboration and Transitions. 3 Credits.**

This course addresses the complex issues surrounding families and children with disabilities and transitions across the lifespan, as well as effective collaboration with families and professionals to support inclusion and/or effective early intervention services, educational programs and transition services for students at-risk and students with disabilities. Emphasis is on successful professional collaboration and effective relationships in educational, transition, and family settings. Pre- or corequisite: SPED 400/SPED 500.

**SPED 432/532. Characteristics of Students with Visual Impairments. 1 Credit.**

Provides an overview of the characteristics of and services to persons with visual impairments, including the impact of visual impairment on infants' and children's growth and development, child and adolescent emotional and social development, and family interaction patterns. Considers the educational, conceptual, psycho-social, and physical implications of a visual impairment. Prerequisites: SPED 400/SPED 500.

**SPED 433/533. Braille Code. 3 Credits.**

This course provides instruction in the development, use, and application of the Braille literary code and its implications for educational/literacy programs for students with visual disabilities. Students will develop the skills to read and write contracted and uncontracted Braille, while acquiring instructional methodologies for teaching children who are blind to read and write. Sources of Braille materials for educational purposes are identified. Pre- or corequisite: SPED 400/SPED 500 and SPED 432/SPED 532.

**SPED 434/534. Medical and Educational Implications of Visual Impairments. 3 Credits.**

Provides an introduction to anatomy and physiology of the visual system and the educational implications of visual pathology. Topics include anatomy of the human eye, normal visual development, pathology of the eye, examination procedures for the identification of visual pathology, and the effects of pathology on visual learning and development. Practicum requires a minimum of 25 hours. Prerequisites: passing scores on Praxis Core Academic Skills for Educator Tests or equivalent as prescribed by the Virginia Board of Education. Pre- or corequisite: SPED 400/SPED 500 and SPED 432/SPED 532.

**SPED 435/535. Orientation and Mobility. 2 Credits.**

Provides the foundation for understanding the components and essence of orientation and mobility. Establishes how the need for independent travel in the blind population created the field of O&M. Explores the philosophy and history of orientation and mobility including cane instruction, dog guides and methods of travel. Addresses techniques in developing orientation skills and basic mobility instruction. Motor and concept skill development are emphasized. Practicum of 45 hours required. Prerequisites: passing scores on Praxis Core Academic Skills for Educator Tests or equivalent as prescribed by the Virginia Board of Education. Pre- or corequisite: SPED 400/SPED 500 and SPED 432/SPED 532.

**SPED 436/536. Curriculum and Assessment of Students with Visual Impairments. 3 Credits.**

Provides students with knowledge and understanding of the educational assessment of students with visual impairments and additional disabilities including deaf-blindness. Students will practice assessing and planning educational programs for students with visual impairments. Addresses assessment of technology for students with visual impairments. Examines determination of learning needs and appropriate learning media, relationship of assessment, IEP development, and placement. Practicum requires a minimum of 25 hours. Prerequisites: passing scores on Praxis Core Academic Skills for Educator Tests or equivalent as prescribed by the Virginia Board of Education. Pre- or corequisite: SPED 400/SPED 500 and SPED 432/SPED 532.

**SPED 437/537. Assistive Technology for People with Sensory Impairments. 3 Credits.**

This course is designed for professionals and/or students interested in serving the visually impaired/blind population or hearing impaired/deaf population. It is designed to heighten the awareness of participants to specific technology and resources available to enhance and improve the ability of individuals with visual and hearing impairments to succeed in school, daily living activities and employment. Knowledge and awareness components of this course will be delivered via distance education. Pre- or corequisite: SPED 400 or SPED 500 and SPED 432 or SPED 532.

**SPED 460/560. Teaching Preschoolers With Diverse Needs. 3 Credits.**

This course prepares students in developing skills in curricula, materials, and methods of instruction for preschool-aged (2-6 years) children with diverse needs. Programming for personal-social, language, motor, and cognitive development are addressed. Data collection, programmatic organization, and classroom planning are covered. Pre- or corequisite: SPED 400.

**SPED 461/561. Developmental/Ecological Assessment Strategies. 3 Credits.**

This course provides students with the skills necessary for assessment of atypical development as well as best practices involved in assessment. Students explore and give assessments to children from birth through eight years of age or older with severe disabilities. Pre- or corequisite: SPED 400 or SPED 500.

**SPED 467/567. Collaboration, Transitions and Infant-Family Intervention. 3 Credits.**

This course prepares professionals from cross-discipline backgrounds to serve families with children who are at-risk and disabled from birth to age three. Emphasis is placed on development of IFSPs, procedures, materials, transitions, and curricula for this population. Pre- or corequisite: SPED 400.

**SPED 469/569. Communication/Language Development/Intervention for Students with Significant Disabilities. 3 Credits.**

This course examines symbolic and non-symbolic communication/language development and acquisition. Emphasis is on routine-based communication training, communication/language facilitation strategies, augmentative communication systems, and informal/functional communication/language assessment procedures for students in early childhood special education, students with autism, and students with multiple disabilities. Prerequisites: SPED 400/SPED 500.

**SPED 483/583. Field Experience Seminar in Special Education. 1 Credit.**

Explores issues, problems, concerns and processes related to teaching and entering the profession of teaching. Passing scores on the Virginia Communication and Literacy Assessment (VCLA) and Virginia Reading Assessment (VRA)/ Reading for Virginia Educators (RVE) will be required by the end of the course. Prerequisites: SPED 313, SPED 400/SPED 500, and SPED 402/SPED 502. Pre- or corequisite: SPED 403.

**SPED 486/586. Teacher Candidate Internship for Special Endorsement. 12 Credits.**

Seven weeks will be completed at the elementary level and seven weeks will be completed at the middle/secondary level. Qualifies as CAP experience. Prerequisites: admission to ODU Teacher Education Program; completion of the approved teacher education program in the specific endorsement area; completion of SPED 483; departmental approval; passing scores on Praxis Core Academic Skills for Educator Tests (or equivalent as prescribed by the Virginia Board of Education); passing scores on Virginia Communication and Literacy Assessment (VCLA), the Virginia Reading Assessment (VRA)/ Reading for Virginia Educators (RVE), the appropriate Praxis II content examination and endorsement program exit exam.

**SPED 495/595. Topics in Special Education. 1-3 Credits.**

This course offers selected topics designed to permit small groups of qualified students to work on subjects of mutual interest in the special education field. Prerequisites: SPED 400.

## STAT - Statistics

### STATISTICS Courses

**STAT 130M. Elementary Statistics. 3 Credits.**

Topics include: data description, elementary probability, binomial and normal distributions, interval estimation, hypothesis testing, and correlation. The role of probability in inference is emphasized. Prerequisites: qualifying score on a placement test administered by the University Testing Center, qualifying SAT or ACT score, a C or better in MATH 101M, or a higher level math course.

**STAT 306. Introductory Statistics. 3 Credits.**

A general probability and statistics course designed specifically to accommodate the needs of school teachers and health professionals. Topics include: descriptive statistics, basic probability, discrete random variables, continuous random variables, interval estimation, regression and correlation, hypothesis testing, and applications. (May not be used to satisfy the upper-division elective requirement of the math major program.) Prerequisites: A grade of C or better in MATH 102M or MATH 162M.

**STAT 310. Introductory Data Analysis. 3 Credits.**

Topics include measures of location, dispersion, and strength of relationship; parametric and nonparametric tests of location; one-way analysis of variance; complete block designs; simple and multiple regression; correlation; measures of association for categorical data. Microsoft EXCEL will be used extensively as an aid in data analysis. Written interpretation of results will be a routine component of daily assignments. Prerequisites: A grade of C or better in STAT 130M or MATH 211.

**STAT 330. An Introduction to Probability and Statistics. 3 Credits.**

Topics include: descriptive statistics, probability theory and probability distributions, mathematical expectation and its role in decision making, hypothesis testing, point and interval estimation, numerous applications. (Not open to students with credit in STAT 331.) Prerequisites: A grade of C or better in MATH 211.

**STAT 331. Theory of Probability. 3 Credits.**

An introduction to probability theory including probability functions, continuous and discrete random variables, combinatorics, special probability distributions, moment generating functions, and limit laws. Prerequisites: A grade of C or better in MATH 211.

**STAT 405/505. Introduction to Data Handling. 3 Credits.**

Use of SAS and R to handle data sets. Topics for SAS include data input, creating permanent data sets, merging data sets, creating new variables, sorting, printing, charting, formatting, IML programming, macro programming, and an overview of proc SQL and other statistical procedures. Topics for R include data structure, control structure, writing functions, and graphics. Prerequisites: grade of C or better in STAT 130M or equivalent and a grade of C or better in MATH 316 or equivalent or permission of instructor.

**STAT 431/531. Theory of Statistics. 3 Credits.**

Topics include point and interval estimation, tests of hypotheses, introduction to linear models, likelihood techniques, and regression and correlation analysis. Prerequisites: A grade of C or better in STAT 331 or departmental permission.

**STAT 432/532. Sampling Theory. 3 Credits.**

Sampling from finite populations is discussed. Topics such as simple random sampling, stratified random sampling and ratio and regression estimation are included. Also discussed are aspects of systematic sampling, cluster sampling, and multi-stage sampling. Prerequisites: A grade of C or better in STAT 431/STAT 531.

**STAT 435/535. Design and Analysis of Experiments. 3 Credits.**

Topics include analysis of variance with one or more factors, multiple comparisons, randomized blocks, Latin squares and related designs: multifactor factorial experiments; blocking and confounding in the 2(k) factorial design; two-level fractional factorial designs. Statistical software will be used to analyze real life data. Prerequisites: A grade of C or better in STAT 405 or STAT 505 and STAT 437 or STAT 537.

**STAT 437/537. Applied Regression Analysis. 3 Credits.**

Topics include theory of least squares, simple linear regression, multiple regression (including its matrix formulation), applications of these techniques to real life data, residual analysis, selection of variables, multicollinearity issues, regression on dummy variables, and analysis of covariance. Prerequisites: A grade of C or better in STAT 330 or STAT 310 or STAT 431/STAT 531. Pre- or corequisite: STAT 405/STAT 505.

**STAT 440/540. Clinical Trials. 3 Credits.**

An introduction to statistical methods used in the design, conduct, and analysis of clinical trials. Topics include: study designs, treatment allocation, sample size and power, clinical life tables, log rank test, cross-over designs, and sequential methods of monitoring clinical trials. Prerequisites: A grade of C or better in STAT 431/STAT 531.

**STAT 442/542. Environmental Statistics. 3 Credits.**

Topics include nonlinear and generalized linear models, quantitative risk assessment, analysis of stimulus-response and spatially correlated data, methods of combining data from several independent studies. Regression settings are emphasized where one or more predictor variables are used to make inferences on an outcome variable of interest. Applications include modeling growth inhibition of organisms exposed to environmental toxins, spatial associations of like species, risk estimation, and spatial prediction. SAS is used extensively in the course. Prerequisites: A grade of C or better in STAT 431/STAT 531 or permission of the instructor; STAT 437 or STAT 537 recommended.

**STAT 447/547. Analysis of Longitudinal Data. 3 Credits.**

Topics include general linear models, weighted least squares (WLS), maximum likelihood (ML), restricted maximum likelihood (REML) methods of estimation, analysis of continuous response repeated measures data, parametric models for covariance structure, generalized estimating equations (GEE) and quasi least squares (QLS), models for discrete longitudinal data: marginal, random effects, and transition models. Limitations of existing approaches will be discussed. Emphasis will be on the application of these tools to data related to the biological and health sciences. Methods will be implemented using statistical software. Prerequisites: A grade of C or better in STAT 431/STAT 531. Pre- or corequisite: STAT 405/STAT 505.

**STAT 449/549. Nonparametric Statistics. 3 Credits.**

Topics include the theory and applications of binomial tests and rank tests, including the tests of McNemar, Mann-Whitney, Friedman, Kruskal-Wallis, and Smirnov. Prerequisites: A grade of C or better in STAT 330 or STAT 331 or departmental permission.

**STAT 450/550. Categorical Data Analysis. 3 Credits.**

Topics include relative risk and odds ratio measures for 2 x 2 tables, the chi-square and Mantel-Haenszel tests, Fisher's exact test, analysis of sets of 2 x 2 tables using Cochran-Mantel-Haenszel methodology, analysis of I x J and sets of I x J tables for both nominal and ordinal data, logistic regression including the logit and probit models, and building and applying loglinear models. Emphasis will be on the application of these statistical tools to data related to the health and social sciences. Interpretation of computer output will be stressed. Prerequisites: A grade of C or better in STAT 431/STAT 531. Pre- or corequisite: STAT 405/STAT 505.

**STAT 460/560. Statistical Simulation/Programming Using Statistical Software Packages. 3 Credits.**

This course is a data-based tour of advanced statistical techniques using software packages, exploring a catalog of data sets (simulated or otherwise) spanning a variety of fields and applications, including data suitable for regression, ANOVA, time series modeling, longitudinal data analysis, and multivariate techniques. Approaches will include parametric, nonparametric, simulation, and bootstrapping. SAS and R (S-plus) will be used extensively, with some other specialized products. For writing actual (not packaged) code, PROC IML and R will be used. This is a finishing course for applied statisticians, highly recommended for students planning a career in statistical programming and simulation. Prerequisites: A grade of C or better in STAT 405/505 and two of STAT 435/STAT 535, STAT 437/STAT 537, STAT 447/STAT 547 and STAT 450/STAT 550.

**STAT 497/597. Topics in Statistics. 1-3 Credits.**

The advanced study of selected topics. Prerequisites: permission of the instructor.

## STEM - Science, Technology, Engineering, and Mathematics Education

### SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS EDUCATION Courses

**STEM 101. Step 1 – Inquiry Approaches to Teaching STEM. 1 Credit.**

Step 1 provides mathematics and science students with the opportunity to explore teaching in a real classroom setting. Master teachers introduce students to examples of high-quality inquiry-based lessons and model the pedagogical concepts to which they are being introduced. In Step 1, with the guidance of the master teacher, students engage in two classroom observations and prepare and teach three inquiry-based lessons in an upper elementary school classroom. A criminal background check will be required as part of this course.

**STEM 102. Step 2 - Inquiry Based STEM Lesson Design. 1 Credit.**

This course continues the exploration of inquiry-based lesson design in STEM education. In this course, students build upon and practice lesson design skills developed in Step 1 while also becoming familiar with exemplary mathematics or science curricula at the middle school level. With the guidance of the master teacher, students engage in one observation and prepare and teach three inquiry-based lessons in a middle school classroom. Students incorporate and demonstrate their content knowledge in developing the inquiry-based lessons. At the end of Step 2, students are generally ready to make a decision about whether they want to pursue a pathway to teacher licensure through the MonarchTeach program. Prerequisites: a grade of C or higher in STEM 101.

**STEM 110T. Technology and Your World. 3 Credits.**

Lecture and application 3 hours; 3 credits. An overview of the resources and systems of technology. Emphasis is on impacts that technology has on individuals and their careers. Activities explore the evolution of technology, its major systems and their impact on individuals and their careers.

**STEM 201. Knowing and Learning in STEM Education. 3 Credits.**

This course is designed to expand the students' understanding of current theories of learning and conceptual development in STEM. Students will investigate theories of knowing and learning in STEM and implications for teaching secondary mathematics and science. Students will examine their own assumptions about learning as well as critically examine the needs of a diverse student population in the classroom. Students are expected to independently register for and take the Praxis I examination while enrolled in this course. Pre- or corequisite: STEM 102.

**STEM 202. Classroom Interactions in STEM Education. 3 Credits.**

This course provides students with an overview of principles for teaching middle and secondary school mathematics or science through an exploration of the role of content, pedagogy, curriculum and technology as they promote learning and impact equity. Students are introduced to ways in which curriculum and technology are used in the classroom to build interrelationships among teachers and students. Frameworks for teaching students of diverse backgrounds equitably are emphasized in the course. A field component that consists of observations and teaching in the high school classroom is included. Pre- or corequisite: STEM 201.

**STEM 221. Industrial Materials. 3 Credits.**

A study of materials used by industry to produce products. Emphasis is on the study of ceramics, plastics, composites, and biotechnological materials. Students learn materials identification, use and processing.

**STEM 231. Materials and Processes Technology. 3 Credits.**

A study of the production processes used with metallic and forest product materials. Industrial resources, their location, extraction, and processing into standard stocks are also covered. Students learn properties, uses and processing of metal and wood materials.

**STEM 241. Energy Systems: Basic Electricity. 3 Credits.**

A study of direct and alternating current and its use in contemporary technology. Activities include experiments and projects to supplement the theory of electricity.

**STEM 242. Technological Systems Control. 3 Credits.**

Students will develop an understanding of systems control technology for application to energy and power, manufacturing, processing and transportation systems. Emphasis will be placed on research and development, creativity and experimentation, and trouble shooting in designing control systems.

**STEM 251G. Computer Literacy: Communication and Information. 3 Credits.**

Lecture 3 hours , 3 credits. A guided review of communication technology and information sources to help students discern between reliable and unreliable sources and techniques. Students develop skills in computer applications, information retrieval, filtering and analyzing data, and formatting and presenting information.

**STEM 301. STEMPS WRITING. 1 Credit.**

Lecture 3 hours/week (5 weeks); 1 credit. Prerequisite: 58 total credit hours, completion of General Education Written Communication requirement, and declared major in STEM Education and Professional Studies. This course covers the elements of effective writing along with identifying editing strategies to correct errors.

**STEM 305. Curriculum for Technology Education. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: STEM 251G and junior standing. National and state trends in instructional content are analyzed. Course content, activities, and facilities are planned. Competency-based and standards-based educational methods are stressed.

**STEM 306. Methods for Technology Education. 3 Credits.**

Lecture and discussion 3 hours; 3 credits. Prerequisites: STEM 251G and junior standing. A practical study and application of recommended methods for teaching technology education. Students plan and present micro-lessons; videotaped micro-teaching demonstrations are included. They also learn to organize student organizations and plan for laboratory management.

**STEM 320. Manufacturing and Construction Technology. 3 Credits.**

A study of production processes used in manufacturing and construction systems. Students will research and design manufactured products for mass production and constructed products for building. The social, cultural, environmental and economic impacts of manufacturing and constructed products on society are discussed. Prerequisites: STEM 221, STEM 231 or permission of instructor.

**STEM 321. Manufacturing Technology. 3 Credits.**

Lecture 1 hour; laboratory 5 hours; 3 credits. A study of the production processes used in manufacturing systems. Emphasis is placed upon planning, organizing and principles of manufacturing. Students research and design enterprise systems for mass production. Emphasis is on manufacturing design requirements and the social, cultural, and economic impacts of manufactured products on society and the environment. Prerequisites: STEM 221, STEM 231 or permission of instructor.

**STEM 322. Construction Technology. 3 Credits.**

Lecture 1 hour; laboratory 5 hours; 3 credits. Prerequisites: junior standing or permission of instructor. A study of the production processes used in construction systems. Emphasis is placed upon planning, organizing and constructing correlated projects and activities in the study of construction.

**STEM 330. Medical, Agricultural, and Biological Technologies. 3 Credits.**

A course for technology education majors that studies technological systems related to medical and food processing technologies. Students learn the basis of these technologies and complete activities that integrate the content with processes and products found in our technological world. Prerequisite: junior standing or permission of department.

**STEM 350. Communication Technology Processes. 3 Credits.**

The study of communication design principles and techniques for technology education. Emphasis is placed on the skills and equipment used in design, production, and distribution of communications. Print and electronic media are explored through technical illustration, video, audio, and other specialty processes of communications. Prerequisite: STEM 251G.

**STEM 351. Communication Technology. 3 Credits.**

Lecture 1 hour; laboratory 5 hours; 3 credits. Prerequisite: junior standing or permission of the instructor. A study of the development and impact of communication technology. Emphasis is placed on the integration of technical skills to produce information-based products such as print and telecommunications media.

**STEM 355. STEM Education Grades 6 Through 8. 3 Credits.**

This course prepares educators to use research-based methods for integrating science, technology, engineering, and mathematics (STEM) in the 6-8 classroom. Emphasis is placed on standards for the STEM disciplines, the development of contextual learning units, and classroom/laboratory instructional strategies. This course contains a 45-hour practicum experience at the middle school level. Prerequisite: junior standing.

**STEM 360. Energy, Power, and Transportation Technologies. 3 Credits.**

Study of the development of energy, power, and transportation systems and the movement of energy, power, people, and cargo. Areas of concern include vehicle systems design and support systems. Prerequisite: junior standing or permission of the instructor.

**STEM 367. Cooperative Education. 1-3 Credits.**

1-3 credits (may be repeated for credit). Prerequisite: approval by the department and Career Management, in accordance with the policy for granting credit for Cooperative Education programs. Available for pass/fail grading only. Student participation for credit based on the academic relevance of the work experience, criteria, and evaluative procedures as formally determined by the department and the Cooperative Education program prior to the semester in which the work experience is to take place. (qualifies as a CAP experience).

**STEM 370T. Technology and Society. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: grade of C or better in ENGL 211C or 221C or 231C; junior standing or permission of the instructor. A multidisciplinary course designed to provide insight into the fundamental, historical, and contemporary nature of technology as an area of human knowledge. Attention is given to the positive and negative aspects of technology and how they affect society. (This is a writing intensive course.)

**STEM 382. Industrial Design. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: junior standing. Students will analyze and design products representative of today's industrial technological society. Emphasis will be placed upon design methodology, aesthetic value, and design thinking.

**STEM 386. Architecture. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. A course designed to apply principles of space planning, architectural construction techniques, and energy-efficient building methods as they apply to residential and commercial structures.

**STEM 401. Project Based Instruction in STEM Education. 3 Credits.**

Through a dynamic process of investigation and collaboration, students aim to master techniques for project-based investigations in STEM classrooms, and teach project-based lessons in the secondary classroom. Students work in teams to formulate questions, make predictions, design investigations, collect and analyze data, make products and share ideas. The use of assessments to improve student learning is emphasized in the course. This course includes a field component that consists of two observation days and three teaching days in a secondary classroom. Prerequisite: STEM 201.

**STEM 402. Perspectives on STEM. 3 Credits.**

This course explores the historical, social, and philosophical implications of mathematics and science through investigations of significant episodes in their history. Students are brought to understand that science and mathematics are not merely body of facts, theories, and techniques but involve diverse processes by which they are continually generated and reformulated. Corequisite: STEM 485.

**STEM 417. Exploring Technology and Modern Industry. 3 Credits.**

A course designed to explore technological systems and new developments in technology education. Emphasis is on middle schools. Prerequisites: STEM 251G and junior standing or permission of the instructor.

**STEM 433/533. Developing Instructional Strategies PreK-6: Mathematics. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: TLED 301 or 290 and 430/530. Following a theory into practice philosophy, students explore, develop, and use instructional strategies, materials, technologies, and activities to promote children's development of attitudes, behaviors, and concepts in mathematics in grades PreK-6 in support of NCTM national instructional standards and the Virginia Standards of Learning.

**STEM 434/534. Developing Instructional Strategies PreK-6: Science. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: TLED 301 or TLED 290 and TLED 430/530. Following a theory into practice philosophy, students explore, develop, and use instructional strategies, materials, technologies, and activities to promote children's development of attitudes, behaviors, and concepts in science in grades PreK-6 in support of AAAS national instructional standards and the Virginia Standards of Learning.

**STEM 453/553. Developing Instructional Strategies for Teaching in the Middle/High School: Mathematics. 3 Credits.**

Following a theory/research-into-practice philosophy, students explore, develop, and use instructional strategies, materials, technologies, and activities to promote the development of attitudes, behaviors, and concepts in mathematics, grades 6-12, in support of national instructional standards and the Virginia Standards of Learning; 35 hours of teaching practicum required. Corequisite: TLED 483. Prerequisites: TLED 301 or TLED 290, TLED 430/530, SPED 313 or TLED 677, passing scores on PRAXIS I or equivalent SAT scores as established by VA Board of Education, a criminal background check, acceptance into teacher education, grade requirement in the specific content area and professional education core, minimum major and overall GPA of at least 2.75. (Additional prerequisites for MCTP students are ECI 608 and 616.).

**STEM 454/554. Developing Instructional Strategies for Teaching in the Middle/High School: Science. 3 Credits.**

Following a theory/research-into-practice philosophy, students explore, develop, and use instructional strategies, materials, technologies, and activities to promote the development of attitudes, behaviors, and concepts in science, grades 6-12, informed by national instructional standards and the Virginia Standards of Learning; 35 hours of teaching practicum required. Corequisite: TLED 483. Prerequisites: TLED 301 or TLED 290 and TLED 430/530, SPED 313 or TLED 677, passing scores on PRAXIS I or equivalent SAT scores as established by VA Board of Education, a criminal background check, acceptance into teacher education, grade requirement in the specific content area and professional education core, minimum major and overall GPA of at least 2.75. (Additional prerequisites for MCTP students are TLED 608 and 616.).

**STEM 455. STEM Education Grades 9 Through 12. 3 Credits.**

This course prepares educators to use research-based methods for integrating science, technology, engineering, and mathematics (STEM) in the 9-12 classroom. Emphasis is placed on Virginia's Standards of Learning (SOLs), technology education competencies, and program planning. This course contains a 45-hour practicum experience at the high school level. Prerequisite: junior standing.

**STEM 471/571. Communication Industries. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing and industrial technology major for 471. A course designed to provide career and technical education teachers, industrial technologists, counselors, and administrators an opportunity to observe and enhance their knowledge of representative communication industries from the local region. (qualifies as a CAP experience).

**STEM 472/572. Construction Industries. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing and industrial technology major for 472. A course designed to provide career and technical education teachers, industrial technologists, counselors, and administrators an opportunity to observe and enhance their knowledge of representative construction industries from the local region. (qualifies as a CAP experience).

**STEM 473/573. Manufacturing Industries. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing and industrial technology major for 473. A course designed to provide career and technical education teachers, industrial technologists, counselors, and administrators an opportunity to observe and enhance their knowledge of representative manufacturing industries from the local region. (qualifies as a CAP experience).

**STEM 474/574. Service Industries. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing and industrial technology major for 474. A course designed to provide career and technical education teachers, industrial technologists, counselors, and administrators an opportunity to observe and enhance their knowledge of representative service industries from the local region. (qualifies as a CAP experience).

**STEM 475/575. Transportation Industries. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing and industrial technology major for 475. A course designed to provide career and technical education teachers, industrial technologists, counselors, and administrators an opportunity to observe and enhance their knowledge of representative transportation industries from the local region. (qualifies as a CAP experience).

**STEM 485. Apprentice Teaching. 9 Credits.**

Internship in school. Available for pass/fail grading only. Offers prospective teacher candidates a culminating experience that provides them with the tools needed for their first teaching jobs. Students are immersed in a local secondary school for 10 consecutive weeks and experience the expectations, processes, and rewards of teaching. As part of their Apprentice Teaching experience, candidates will be required to attend a one hour weekly seminar that will bring them together with master teachers to share experiences and to explore issues, problems, concerns, and processes related to their teaching experiences and to entering the profession of teaching. Corequisite: STEM 402. Prerequisites: Completion of all course work in the MonarchTeach professional development sequence program and BIOL 360 or OEAS 360 or CHEM 360 or PHYS 360, passing scores on PRAXIS I or equivalent SAT or ACT scores as established by VA Board of Education, passing scores on the appropriate PRAXIS II content examination and the Virginia Communication and Literacy Assessment, departmental approval, minimum major and overall GPA of at least 2.75 and a criminal background check.

**STEM 486/586. Middle School Student Teaching for Technology Education. 6 Credits.**

6 credits. Prerequisites: STEM 305, 306; SEPS 408, SEPS 450; SPED 313; and TLED 408. Passing scores on PRAXIS I or State Board of Education-approved SAT or ACT scores and passing scores on the appropriate PRAXIS II content examination are required. Classroom placement for student teaching in a middle school technology laboratory. Students apply content and methodology under the supervision of a cooperating teacher and university faculty member. Available for pass/fail grading only. (Qualifies as a CAP experience.).

**STEM 488. High School Student Teaching for Technology Education. 6 Credits.**

Classroom placement for student teaching in a high school technology laboratory. Students apply content and methodology under the supervision of a cooperating teacher and university faculty member. Available for pass/fail grading only. (qualifies as a CAP experience) Prerequisites: STEM 305, 306; SEPS 408, SEPS 450; SPED 313; TLED 408 and passing scores on PRAXIS I or State Board of Education-approved SAT or ACT scores, and passing scores on the appropriate PRAXIS II content examination.

**STEM 495/595. TOPICS. 1-3 Credits.**

## **THEA - Theatre**

### **THEATRE Courses**

**THEA 152. Acting One. 3 Credits.**

Develops and explores creative potential through exercises, improvisations, performance games, and original performances created by class. Emphasis is on qualities of spontaneity, concentration, ensemble awareness, imagination, and rhythmic and spatial form.

**THEA 173+. Theatre Activities. 1 Credit.**

This course is an activity course in which the students participate in University Theatre Activities such as set building, costume construction or running crew for season productions. This qualifies as a CAP experience.

**THEA 174+. Theatre Activities. 1 Credit.**

This is an activity course in which the students participate in University Theatre Activities such as set building, costume construction or running crew for season productions. This qualifies as a CAP experience.

**THEA 195. Topics in Theatre. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in a booklet distributed to academic advisors.

**THEA 196. Topics in Theatre. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in a booklet distributed to academic advisors.

**THEA 225. Introduction to Production Technology. 3 Credits.**

Fundamentals of construction, lighting, and production techniques in contemporary theatre and film. Students will apply acquired skills to active productions for ODU Theatre and Film productions.

**THEA 227A. Honors: Film Appreciation. 3 Credits.**

This class will focus on both contextual and close text analysis of masterworks as they have influenced film art and industry. Students in this course are expected to develop basic research, communication, viewing and critical thinking skills as they apply their knowledge to the analysis of the film experience. Open to students in the Honors Program only.

**THEA 230. Drama for Production. 3 Credits.**

A practitioner-oriented examination of drama from its origins to the present. Particular emphasis is placed on plays from around the world that are associated with changes in theatre practice.

**THEA 241A. The Theatre Experience. 3 Credits.**

An introductory audience-oriented examination of the elements of theatre and their historical development through study of plays and performances; emphasis will be directed to actually experiencing live theatre. Attendance at performances is required.

**THEA 244. Introduction to Production Design. 3 Credits.**

An introduction to principles, methods, and materials used in designing stage and film productions.

**THEA 246. Introduction to Stage Combat. 3 Credits.**

This course trains performers in techniques for creating believable and safe stage combat. Techniques will involve falling, landing, hand-to-hand combat and various weapons, resulting in fully staged fights by the end of the course.

**THEA 248. Introduction to Stage Makeup. 3 Credits.**

Develops skills and techniques for design and application of stage makeup.

**THEA 252. Acting Two. 3 Credits.**

Basic introduction to principles of acting which may be applied to stage and media and application of various techniques through exercises, improvisations, and performances of short scenes. Prerequisites: THEA 152.

**THEA 270A. Film Appreciation. 3 Credits.**

This class will focus on both contextual and close text analysis of masterworks as they have influenced film art and industry. Students in this course are expected to develop basic research, communication, viewing and critical thinking skills as they apply their knowledge to the analysis of the film experience.

**THEA 271. Introduction to Filmmaking. 3 Credits.**

This course will introduce the beginning student to making movies. Students will learn the basics of working with cameras, lights, sound recording, video editing and post production. This is a hands-on production course.

**THEA 273+. Theatre Activities. 1 Credit.**

This is an activity course in which the students participate in University Theatre Activities such as set building, costume construction or running crew for season productions. This qualifies as a CAP experience.

**THEA 274+. Theatre Activities. 1 Credit.**

This is an activity course in which the students participate in University Theatre Activities such as set building, costume construction or running crew for season productions. This qualifies as a CAP experience.

**THEA 295. Topics in Theatre. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in a booklet distributed to all academic advisors.

**THEA 320. Auditioning Technique. 3 Credits.**

Course will examine practical audition skills and provide an orientation to the tools of procuring professional auditions, including head shots and resumes. Emphasis will be placed on effectively selecting and preparing auditions for stage, film and television. Prerequisites: THEA 152 and THEA 252.

**THEA 321. Production Management for Television and Stage. 3 Credits.**

This course will assist students in understanding the elements of production management both in television and on stage. The course emphasizes organizational and communication skills; technical production knowledge; professional rehearsal and performance protocol according to the rules of AEA, AFTRA and SAG as well as basic production budgeting and scheduling. Prerequisite: THEA 225 or COMM 225 or permission of the instructor.

**THEA 325. Sound Design for Stage and Camera. 3 Credits.**

This class will introduce the concepts and techniques of sound design and sound effects for the stage and camera. Students will learn design of sound elements in both a live and recorded environment as well as learn the current equipment and software in digital sound reproduction. Prerequisites: Junior standing or permission of instructor.

**THEA 330. The Short Script. 3 Credits.**

This course introduces the principles of screenwriting using the short script as a basis for the exploration. The intent of the course is to introduce concepts of format, characterization, plot, dialogue and narrative style for the short script. Prerequisites: Junior standing or permission of the instructor.

**THEA 341. Lighting Design for Stage and Film. 3 Credits.**

A production course introducing students to the world of light and shadow, mood and composition by surveying lighting design, its technologies for stage and camera, and such principles as basic electrical theory and stage/studio/location design aesthetics. Prerequisite: THEA 225/COMM 225 or THEA 271/COMM 271 or permission of instructor.

**THEA 343. History of Theatre: Beginnings to the Renaissance. 3 Credits.**

A cultural-epoch examination of world theatre as it developed through dramatists, directors, designers, and actors from its beginning to the eighteenth century. Prerequisites: THEA 230 or junior standing or permission of the instructor.

**THEA 344. History of Theatre: Classic Baroque to the Present. 3 Credits.**

A cultural-epoch examination of world theatre as it developed through dramatists, designers, and actors from the eighteenth century to the present. Prerequisites: THEA 230, junior standing, or permission of the instructor.

**THEA 345. Scenographic Design. 3 Credits.**

This course will explore advanced principles of design for the stage in the areas of scenery. The process will include the application of various artistic styles to stage production. Prerequisite: THEA 225 or COMM 225 or THEA 244.

**THEA 346. Screenwriting I. 3 Credits.**

A course that exposes the student to the fundamental narrative screenwriting principles taught through text reading, film viewing and analysis, class discussions, and writing assignments. Prerequisites: Junior standing or permission of instructor.

**THEA 347. Movement for the Actor. 3 Credits.**

An examination through exercises and assignments of principles for developing a disciplined, flexible body for character creation. Prerequisite: THEA 152 or permission of the instructor.

**THEA 348. Acting for the Camera. 3 Credits.**

Course will examine the process of building characters for the camera, and the ways in which the conventions of the stage are adapted for the film or video audience. Prerequisite: THEA 152.

**THEA 349. Costume Design for Stage and Camera. 3 Credits.**

This course explores the design aesthetic, historical context, and contemporary impact on performance of the costume garment and its accessories. Students will explore the application of design principles in a practical experience. Prerequisite: THEA 225 or COMM 225.

**THEA 350. The Spoken Text. 3 Credits.**

An introduction to the basic structures of verbal style through performance of the works of a variety of classical and contemporary writers. Students will become comfortable with linguistic techniques suitable to a range of performance situations. Prerequisites: THEA 152 or permission of the instructor.

**THEA 352. Acting Three. 3 Credits.**

Study of and experimentation with various theories concerning the preparation of roles and special performance characteristics of different styles and types of drama. Considerable attention is directed toward scene study. Prerequisites: THEA 152 and THEA 252.

**THEA 360. Voice for the Stage I. 3 Credits.**

This course will explore facets of vocal production, speech and expression necessary for an engaging performance on stage. Through exercises and text work, the student will learn healthy vocal production, elements of clear speech and techniques for improving vocal range and expressiveness. Prerequisite: THEA 152.

**THEA 367. Cooperative Education. 1-3 Credits.**

Available for pass/fail grading only. Student participation for credit based on the academic relevance of the work experience, criteria and evaluative procedures as formally determined by the department and the Cooperative Education program prior to the semester in which the work experience takes place. (qualifies as a CAP experience) Prerequisites: Approval of the department and the Career Management Center, in accordance with the policy for granting credit for Cooperative Education programs.

**THEA 368. Internship. 3 Credits.**

Practicum/field experience in professional settings for students in all areas of Theatre and Film. Pass/Fail only. Prerequisites: Approval of the Director of Theatre and major advisor.

**THEA 369. Internship for the BFA. 3 Credits.**

A structured work experience with or without remuneration; a paper, a log and portfolio of work time plus satisfactory evaluations by supervisor and cooperating faculty member are required. (qualifies as a CAP experience) Pass/Fail only. Prerequisites: Approval of Director of Theatre and BFA Director.

**THEA 370. The Video Project. 3 Credits.**

A studio course that presents an opportunity for the student to produce digital video content. This is a hands-on course which is organized to allow the student to experience the entire process of developing a project for the camera from scripting through filming to editing and finishing detail. Prerequisites: THEA 271 or COMM 271 or permission of the instructor.

**THEA 371. History of Animation. 3 Credits.**

This course traces the evolution of the animated film worldwide, from the silent to the modern era. The purpose of the course is to provide students with a broad chronological and international overview of animated film masterworks. Prerequisites: Junior standing or permission of the instructor.

**THEA 373+. Theatre Activities. 1 Credit.**

This is an activity course in which the students participate in University Theatre Activities such as set building, costume construction or running crew for season productions. This qualifies as a CAP experience.

**THEA 374+. Theatre Activities. 1 Credit.**

This is an activity course in which the students participate in University Theatre Activities such as set building, costume construction or running crew for season productions. This qualifies as a CAP experience.

**THEA 375. Television Production. 3 Credits.**

This course explores the basic process of producing television from script to presentation. Prerequisites: THEA 271 or COMM 271 or permission of the instructor.

**THEA 380. The Video Documentary I. 3 Credits.**

This course offers the student an opportunity to explore the world of documentary filmmaking. By using the camera as a research tool in developing evidence in support of a thesis, the student is better able to understand documentary filmmaking. Students will develop projects leading toward the completion of a short documentary film or video. Prerequisites: THEA 271 or COMM 271.

**THEA 383. Directing Movies. 3 Credits.**

A Director provides a movie's vision. This class will help students learn how to develop and articulate that vision. It will also explore the process of casting, working with actors, and collaborating with the other principle players on a movie, such as the Cinematographer, Production Designer, and Editor. Prerequisites: THEA 271 or COMM 271.

**THEA 385. Cinematography. 3 Credits.**

Introduces students to cinematography. The course explores camera technique, blocking actors, lighting, and cinematography fundamentals. The concepts of the course are applied to fiction and nonfiction cinema. This is a production class. Prerequisites: THEA 271 or COMM 271.

**THEA 386. Video and Audio Editing. 3 Credits.**

This course will cover post-production techniques, including: video editing utilizing Avid Media Composer, audio editing utilizing ProTools, and color correction utilizing DaVinci Resolve. Students will also learn how to properly import and organize material, move it between applications, and output deliverables. Prerequisites: THEA 271 or COMM 271.

**THEA 395. Topics in Theatre. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described to all academic advisors. Prerequisites: Junior standing and permission of the instructor.

**THEA 396. Topics in Theatre. 1-3 Credits.**

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule, and will be more fully described in a booklet distributed to all academic advisors. Prerequisites: junior standing and permission of the instructor.

**THEA 441/541. American Theatre. 3 Credits.**

A study of dramatic theories and theatre practices as they relate to the development and growth of theatrical art in the United States. Prerequisites: THEA 230, junior standing, or permission of the instructor.

**THEA 442/542. Principles of Directing. 3 Credits.**

An examination and practical application of principles of stage direction as influenced by play script, acting talent, set and lighting design, and the technical facilities of production organizations. Prerequisites: THEA 152 and THEA 230, and THEA 244 or permission of the instructor.

**THEA 445/545. Experimental Theatre. 3 Credits.**

An in-depth study of avant-garde theatre scripts and performance techniques from 1900 to the present. Prerequisites: THEA 230 or permission of the instructor.

**THEA 446. Directing for the Camera. 3 Credits.**

This course seeks to provide students with fundamental principles and practical techniques of directing the narrative fiction film: script development and analysis, production planning, shot composition and framing, and working with actors and crew. Prerequisites: THEA 271 or COMM 271.

**THEA 447/547. Women in Theatre. 3 Credits.**

A study of the contributions women have made to the theatre as actresses, directors/managers, designers, and playwrights, and of their creative problems and methodologies. Prerequisites: THEA 230 or permission of the instructor.

**THEA 449W/549. Script and Performance Analysis. 3 Credits.**

Approaches script analysis from a directorial perspective through the written examination of action, character, language, music, and spectacle, as well as the play's production history and historical context, to discover how plays might be staged for the contemporary audience. Plays in production will be examined from a critical perspective with attention to artistic interpretation in the areas of direction, design, and performance. (This is a writing intensive course.) Prerequisite: THEA 152, THEA 230, THEA 244, and a grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C, or permission of the instructor.

**THEA 452/552. Acting Four. 3 Credits.**

An advanced scene study class exploring issues of style and period pertinent to portraying characters on stage. Prerequisites: THEA 152, THEA 252 and THEA 352.

**THEA 460. Voice for the Stage II. 3 Credits.**

Course will continue the study of vocal production, speech and expression necessary for on stage performance of both classical and modern text. Techniques for producing effective dialects will be introduced as well as the application of dialect towards character development. Prerequisite: THEA 152.

**THEA 471W/571. International Film History. 3 Credits.**

An examination of world cinema as a technology, a business, an institution, and an art form from its inception to the present. Emphasis is on the narrative fiction film, its technological and aesthetic development, economic organization, and socio-cultural context. Representative classic and contemporary works will be screened and analyzed. (This is a writing intensive course.) Prerequisites: COMM 270A or THEA 270A, a grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C, and junior standing or permission of the instructor.

**THEA 472. Acting Five. 3 Credits.**

An examination and advanced study of techniques relevant to specialized theatre performance. This course will allow advanced students the opportunity to explore a variety of work including experimental theatre, avant garde works, mediated performance and visual based theatre. Prerequisites: THEA 152 and THEA 252 or permission of instructor.

**THEA 473+. Theatre Activities. 1 Credit.**

This is an activity course in which the students participate in University Theatre Activities such as set building, costume construction or running crew for season productions. This qualifies as a CAP experience.

**THEA 474+. Theatre Activities: Performance. 1 Credit.**

Participation in University Theatre activities as a performer. Available through audition only. Prerequisites: Audition.

**THEA 479W/579. American Film History. 3 Credits.**

An examination of American motion pictures as an art form, a business and an institution from its inception to the present. Primary attention is accorded to the narrative fiction film, its aesthetic and technological development, economic organization and social impact. This course highlights the many connections between film history and American culture. (This is a writing intensive course.) Prerequisites: A grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C; THEA 270A or COMM 270A; and junior standing or permission of the instructor.

**THEA 480/580. The Video Documentary II. 3 Credits.**

A production/studio course designed to complement the work developed in Theatre 380: The Video Documentary I. Discussion/presentation topics range from production field work to post-production editing. The final third of the semester will be devoted to compiling the rough footage in post production. Prerequisites: THEA 380 or COMM 380.

**THEA 482. Screenwriting II. 3 Credits.**

Students explore visual storytelling through the theories guiding character development, narrative construction, thematic layers, scene analysis, and many more. Students participate in a variety of critical and writing exercises to enhance their knowledge of the craft of screenwriting. Prerequisites: COMM 346 or THEA 346.

**THEA 483. Advanced Video Project. 3 Credits.**

This course introduces students to the processes and techniques of a narrative film production. Students experience pre-production, production, and post-production phases in creating a product to be entered in regional and national competitions. Prerequisite: COMM 271/THEA 271 and COMM 370/THEA 370 or permission of instructor.

**THEA 485. Film and Television Genres. 3 Credits.**

This course is designed to examine the conventions and meanings of various film and television genres within their broader aesthetic, socio-historical, cultural, and political contexts. Each time the class is offered it will focus in depth on a different genre, such as the gangster, the Western, the musical, the comedy, science fiction, among others. Prerequisites: COMM 270A or THEA 270A.

**THEA 486/586. Advanced Filmmaking. 3 Credits.**

Offers the advanced film/video maker an opportunity to produce a project beyond the scope of previous classroom projects. Prerequisites: THEA 271 or COMM 271, THEA 346 or COMM 346, THEA 370 or COMM 370, THEA 385 or COMM 385, THEA 446 or COMM 446, and THEA 483 or COMM 483 and approval of instructor only.

**THEA 489. Methods of Teaching Theatre. 3 Credits.**

Focuses on conceptual foundations of theatre education including its history, and on methods and materials for classroom instruction and theatrical rehearsals and performances. Prerequisites: Junior standing.

**THEA 490. Theatre Education Practicum. 1 Credit.**

This course provides students with an opportunity to further develop their understanding of theatre instruction by personal observation and participation in the classroom setting. (qualifies as a CAP experience) Prerequisites: Junior standing and permission of the College of Education.

**THEA 495/595. Topics in Theatre. 1-3 Credits.**

The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule. Prerequisites: Appropriate survey course or permission of the instructor.

**THEA 496/596. Topics in Theatre. 1-3 Credits.**

The advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule. Prerequisites: appropriate survey course or permission of the instructor.

**THEA 497/597. Tutorial Work in Special Topics in Theatre. 1-3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Prerequisites: Senior standing.

**THEA 498/598. Tutorial Work in Special Topics in Theatre. 1-3 Credits.**

Independent reading and study on a topic to be selected under the direction of an instructor. Conferences and papers as appropriate. Prerequisites: senior standing.

**THEA 499. Senior Project. 1 Credit.**

Completion of a creative project leading to a written work and a presentation during a student's senior year related to student's interest area. Topic to be selected under the direction of an instructor with conferences as appropriate. Prerequisites: Senior standing as theatre major and approval of major advisor.



# TLED - Teaching & Learning- Education

## TEACHING AND LEARNING-EDUCATION Courses

### **TLED 290. Education for the 21st Century. 3 Credits.**

Lecture 3 hours; 3 credits. This course is designed for use with dual enrollment classes that are approved by the Darden College of Education and are using the Teachers for Tomorrow curriculum. The course introduces the historical, philosophical, and sociological foundations and contemporary issues of American public education, and includes the use and analysis of assessment data and the construction and interpretation of assessments. Students are expected to independently register for and take the Praxis I examination while enrolled in this course. Students in PreK-6 programs will complete a 15 hour observation/participation experience in a primary setting (preK-3) and a 15 hour observation/participation experience in an upper elementary (4-6) setting; students in 6-12 or 6-8 programs will complete a 30 hour observation/participation experience in an appropriate 6-12 setting. (qualifies as a CAP experience).

### **TLED 301. Foundations and Introduction to Assessment of Education. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: sophomore standing. Introduces the historical, philosophical, and sociological foundations and contemporary issues of American public education. Includes the use and analysis of assessment data and the construction and interpretation of assessments. Students are expected independently to register for and take the Praxis I examination while enrolled in this course. Students in PreK-6 programs will complete a 15 hour observation/participation experience in a primary setting (preK-3) and a 15 hour observation/participation experience in an upper elementary (4-6) setting; students in 6-12 or 6-8 programs will complete a 30 hour observation/participation experience in an appropriate 6-12 setting. (qualifies as a CAP experience).

### **TLED 303. Orientation to Teacher Education. 0 Credits.**

Prerequisite: junior standing or permission of instructor. Introduces students interested in teacher education to the University, College of Education, and the profession of teaching. (Learning Community students only).

### **TLED 360. Classroom Management and Discipline. 2 Credits.**

Lecture 2 hours; 2 credits. Prerequisite: TLED 290 or 301. Examines theories, research, and practices involved in classroom management, motivation, and discipline. Explores techniques for organizing and arranging classroom environments that are most conducive to learning.

### **TLED 395. Topics in Education. 1-3 Credits.**

Lecture 1-3 hours; 1-3 credits. Prerequisite: junior standing. Explores contemporary problems and trends in education. Emphasis is placed upon topics related to curriculum, instructional strategies, and evaluation.

### **TLED 406/506. Teaching in the Multicultural Classroom. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. Explores the teaching strategies, materials and understandings needed in developing responsive classroom environments for children from diverse cultural, ethnic, economic and linguistic backgrounds.

### **TLED 408. Reading and Writing in Content Areas. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: TLED 301, 430/530, SPED 313. Examines and promotes understanding and use of comprehension/composing skills in all content areas, including a repertoire of questioning strategies, summarizing and retelling strategies, and strategies in literal, interpretive, critical and evaluative comprehension/composing across the curriculum, grades 6-12.

### **TLED 430/530. PK-12 Instructional Technology. 3 Credits.**

In this class, contemporary productivity tools and Internet resources are used to develop and evaluate instructional plans and techniques. The course is designed with three components. The first is on understanding models for effectively integrating technology into the curriculum. Next, the focus is on evidence-based good teaching practices that span across grades and subject levels, and the technologies and ways of using those technologies that support those practices. Finally, the focus is on technological tools that support the teacher in their everyday duties. Upon completion of this course, students should be able to pass, or apply for exemption from their school district's TSIP exam. Prerequisite: TLED 301.

### **TLED 432/532. Developing Instructional Strategies PreK-6: Language Arts. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: TLED 301 or 290, 430/530 and 468/568. Following a theory into practice philosophy, students explore, develop, and use instructional strategies, materials, technologies, and activities to promote children's development of attitudes, behaviors, and concepts in language arts in grades PreK-6 in support of NCTE national instructional standards and the Virginia Standards of Learning.

### **TLED 435/535. Developing Instructional Strategies PreK-6: Social Studies. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisites: TLED 301 or 290 and 430/530. Following a theory into practice philosophy, students explore, develop, and use instructional strategies, materials, technologies, and activities to promote children's development of attitudes, behaviors, and concepts in social studies in grades PreK-6 in support of NCSS national instructional standards and the Virginia Standards of Learning.

### **TLED 451/551. Developing Instructional Strategies for Teaching in the Middle/High School: English. 3 Credits.**

Following a theory/research-into-practice philosophy, students explore, develop, and use instructional strategies, materials, technologies, and activities to promote the development of attitudes, behaviors, and concepts in English, grades 6-12, informed by national instructional standards and the Virginia Standards of Learning; 35 hours of teaching practicum required. Corequisite: TLED 483. Prerequisites: TLED 301 or 290, 430/530, SPED 313 or TLED 677, passing scores on PRAXIS I or equivalent SAT scores as established by VA Board of Education, a criminal background check, acceptance into teacher education, no grade less than C- in content area and professional education core, minimum major and overall GPA of at least 2.75. (Additional prerequisites for MCTP students are TLED 608 and 616.).

### **TLED 455/555. Developing Instructional Strategies for Teaching in the Middle/High School: Social Studies. 3 Credits.**

Following a theory/research-into-practice philosophy, students explore, develop, and use instructional strategies, materials, technologies, and activities to promote the development of attitudes, behaviors, and concepts in social studies, grades 6-12, informed by national instructional standards and the Virginia Standards of Learning; 35 hours of teaching practicum required. Corequisite: TLED 483. Prerequisites: TLED 301 or 290, 430/530, SPED 313 or TLED 677, passing scores on PRAXIS I or equivalent SAT scores as established by VA Board of Education, a criminal background check, acceptance into teacher education, no grade less than C- in content area and professional education core, minimum major and overall GPA of at least 2.75. (Additional prerequisites for MCTP students are TLED 608 and 616.).

### **TLED 468/568. Language Acquisition and Reading for Students with Diverse Learning Needs. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. This course provides an overview of normal language development and language disorders which impact the acquisition of language based curriculum skills such as listening, speaking, reading, and written expression. Emphasis is on instructional techniques to assist students with diverse learning needs to achieve reading and comprehension skills. Effective reading strategies and curricula for individuals with disabilities will also be reviewed.

**TLED 474/574. Foundations and Contemporary Issues in Early Childhood Education. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. This course introduces students to objectives, curricula, and organization of early childhood education as it is practiced throughout the United States and other countries. Foundations of education programs and current research and practices related to the education of young children will be addressed with an emphasis on sociological, cultural, historical, and philosophical factors.

**TLED 476. Practical Applications in the World of Children. 3 Credits.**

3 credits. Prerequisite: junior standing. This course is part of the Children's Rights interdisciplinary minor. Supervised involvement of the student in Old Dominion University's Child Study Center classrooms where the student observes and gains experience working with master's-level teachers while planning and executing developmentally appropriate activities for young children from age six weeks to six years.

**TLED 478/578. Integrating Instruction Across the Curriculum PreK-6. 3 Credits.**

Following a theory into practice philosophy and building on the instructional strategies for specific disciplines, students explore, develop, and use advanced instructional materials, technologies, and activities to promote interdisciplinary and multidisciplinary instruction across the curriculum in grades PreK-6 in support of national standards and the Virginia Standards of Learning. The field experience component (40 hours) includes participation in preK-3 and 4th-6th grade classrooms in an accredited public or non-public school, per program requirement. Prerequisites: TLED 301 or TLED 290, passing scores on PRAXIS I or met equivalent scores as established by VA Board of Education, a criminal background check, acceptance into teacher education, no grade less than C in content area and professional education core, minimum major overall GPA of at least 2.8 and at least two of the following courses: TLED 432/532, TLED 435/535, TLED 478/578; STEM 433/533, and STEM 434/534.

**TLED 479/579. Classroom Management and Practice PreK-3; PreK-6. 3 Credits.**

Course prepares prospective PreK-3 and PreK-6 teachers to provide instruction and management addressing the intellectual, physical, emotional and social needs of PreK-6 learners founded in empirically based practice. The field based component (70 hours) includes participation in PreK-3 and 4th-6th grade classrooms in an accredited public or non-public school. Students in the PreK-3 program are required to complete 35 hours in the Child Development Center. Attendance at seminars and debriefing sessions is required. Prerequisites: TLED 301 or 290, passing scores on PRAXIS I or met equivalent scores as established by VA Board of Education, a criminal background check, acceptance into teacher education, no grade less than C in content area and professional education core, minimum major and overall GPA of at least 2.8 and at least two of the following courses: TLED 432/532, 435/535, 478/578; STEM 433/533, 434/534.

**TLED 483/583. Seminar in Teacher Education. 1 Credit.**

Lecture 1 hour; 1 credit. Corequisite: TLED 451/551 or STEM 453/553 or 454/554 or TLED 455/555. Explores issues, problems, concerns, and processes related to teaching and to entering the profession of teaching. Passing score on PRAXIS II in licensure content area, passing scores on the Virginia Communication and Literacy Assessment (VCLA), and where appropriate passing scores on the Virginia Reading Assessment (VRA) are required to pass this course.

**TLED 485. Teacher Candidate Internship. 12 Credits.**

Internship in school. Available for pass/fail grading only. Prerequisites: completion of all course work in an approved program in teacher education, passing scores on PRAXIS I or equivalent SAT or ACT scores as established by VA Board of Education, passing scores on the appropriate PRAXIS II content examination, passing score on the Virginia Communication and Literacy Assessment, departmental approval, permission of the director of teacher education services, grade requirement in the specific content area and professional education core, minimum major and overall GPA of at least 2.75 and a criminal background check. (qualifies as a CAP experience).

**TLED 486/586. Student Teaching for Special Endorsement. 3-6 Credits.**

Internship in school. Available for pass/fail grading only. Prerequisites: Collegiate Professional Certificate and/or completion of an approved program in teacher education, passing scores on PRAXIS I or equivalent SAT or ACT scores as established by VA Board of Education, passing scores on the appropriate PRAXIS II content examination, passing score on the Virginia Communication and Literacy Assessment, departmental approval, permission of the director of teacher education services, meet grade requirement in the specific content area and professional education core, minimum major and overall GPA of at least 2.75, and a criminal background check. (qualifies as a CAP experience).

**TLED 492/592. Integrating Mathematics and Science Across the Curriculum, PK-3. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. This course has a theory-into-practice goal. The focus for this class will be to develop and use teaching strategies and techniques in the content area of mathematics and science, which are based on Piaget's theory of constructivism and are compatible with the NCIM & NSE Standards and the Virginia SOLs. Practical ways of encouraging thinking about math and science by young children, PK-3, and the natural integration of these subjects across the early childhood curriculum will be emphasized.

**TLED 493/593. Integrating Children's Literature, Language Arts and Social Studies Across the ECE Curriculum. 3 Credits.**

Lecture 3 hours; 3 credits. Prerequisite: junior standing. This course offers a review of literary materials suitable for nursery, kindergarten and early elementary school children. Social issues affecting children and early childhood literature related to these issues, the use of teaching strategies and techniques in the content areas of history, geography, economics and civics which are based on Piaget's theory of constructivism, the National Council of Teachers of English and the National Council for the Social Studies standards, and the Virginia SOLs are emphasized.

**TLED 495/595. Topics in Education. 1-4 Credits.**

Lecture 1-4 hours; 1-4 credits. Prerequisite: junior or graduate standing. Explores contemporary problems and trends in education. Emphasis is placed upon topics related to curriculum, instructional strategies, and evaluation.

**TLED 496/596. Topics in Education. 1-3 Credits.**

Lecture 1-3 hours; 1-3 credits. Prerequisite: junior or graduate standing. Cannot be applied to a Master of Science in Education degree in the Department of Teaching and Learning. Explores contemporary problems and trends in education. Emphasis is placed upon topics related to curriculum, instructional strategies, and evaluation.

**TLED 497/597. Topics in Education. 1-3 Credits.**

Hours to be arranged: 1-3 credits. Prerequisite: junior or graduate standing. Allows the student to engage in independent study of issues and trends in education. Emphasis is placed upon topics related to curriculum, instructional strategies, and evaluation.

**TLED 498/598. Topics in Education. 1-3 Credits.**

Hours to be arranged: 1-3 credits. Prerequisite: junior or graduate standing. Allows the student to engage in independent study of issues and trends in education. Emphasis is placed upon topics related to curriculum, instructional strategies, and evaluation.

## UNIV - University

### UNIVERSITY Courses

**UNIV 100. University Orientation. 1 Credit.**

**UNIV 110. Academic Success. 0 Credits.**

**UNIV 111. Sophomore Seminar. 0 Credits.**

This seminar provides resources and opportunities for students to build relationships with other sophomores and faculty and to explore individual strengths, values, skills, and interests.

**UNIV 112. Transfer Seminar. 0 Credits.**

This seminar provides resources and opportunities for students to build relationships with other transfer students and faculty and to explore individual strengths, values, skills, and interests.

**UNIV 120. Career Exploration. 1 Credit.**

A systematic exploration of individual interests and skills and career resources. Emphasis is placed on defining goals and developing strategies to achieve goals. Career testing and individual conferences are included.

**UNIV 130. Learn and Earn Advantage Program. 1 Credit.**

The purpose of this course is to engage students in self-reflection and work place skill enhancement, applicable to experiences encountered as part of the LEAP, as well as in the world of work. The course will help students to develop and be able to apply skills in the areas of self-presentation, work ethic, team membership, professional communication, independence and initiative, and seeing the "Big Picture" in relation to everyday workplace issues.

**UNIV 150. Writing for College Success. 3 Credits.**

Students learn the key features of college writing and use writing to learn important success strategies that will help them to transition into University life.

**UNIV 195. Topics in Career Management. 1-3 Credits.**

A study of selected career-related topics. Titles for specific course offerings will appear in the course schedule.

**UNIV 200. Career Implementation. 1 Credit.**

Lecture 1 hour; 1 credit. A practical examination and application of resume and cover letter writing, job search strategies, including electronic job search and networking, interview skills, and evaluating employment offers. Designed to prepare students for internships or cooperative education experiences and/or for post graduation employment.

**UNIV 295. Topics in Career Management. 1 Credit.**

1 credit. A study of selected career-related topics. Titles for specific course offerings will appear in the course schedule.

**UNIV 395. Topics in Career Management. 1 Credit.**

1 credit. A study of selected career-related topics. Titles for specific course offerings will appear in the course schedule.

**UNIV 400. Career Engagement. 1 Credit.**

Lecture 1 hour; 1 credit. A practical examination and application of resume and cover letter writing, job search strategies including the electronic job search, networking, interview skills, and negotiating a job offer. Topics will also include the transition to the world of work and professional development. Designed for students seeking post-graduation employment.

**UNIV 495. Topics in Career Management. 1-3 Credits.**

1 credit. A study of selected career-related topics. Titles for specific course offerings will appear in the course schedule.

## WMST - Women's Studies

### WOMEN'S STUDIES Courses

**WMST 201S. Introduction to Women's Studies. 3 Credits.**

An introduction to the interdisciplinary field of women's studies, drawing on materials from the social sciences. Topics include the social construction of gender, cross-cultural variations in women's lives, media representations, work, health, women's roles in politics, and sexuality. Prerequisites: Must qualify to enroll in ENGL 110C.

**WMST 226S. Honors: Women in A Changing World. 3 Credits.**

A special honors version of WMST 201S open only to students in the Honors College. Prerequisites: ENGL 110C.

**WMST 301. Feminist Foundations. 3 Credits.**

This course covers the history of women's studies as a discipline. It also explores current opportunities for women's studies majors and minors. The course is designed to develop students' skills in critical reading, research, and argument while examining three topics: religion, marriage, and gender science. Prerequisites: WMST 201S.

**WMST 302W. Dimensions of Diversity: Intersectionality Among Women. 3 Credits.**

This course explores women's experiences at intersections of gender, race, and class within society, in general, and specifically within the various women's movements that have taken place in the 19th and 20th Centuries, charting the development of feminism. Additionally, the course examines the need for the discipline of Women's Studies to sponsor change for women. (This is a writing intensive course.) Prerequisites: WMST 201S, a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, and 6 semester hours in literature, history, social sciences, or performing arts courses.

**WMST 303. Queer Studies. 3 Credits.**

This course is an interdisciplinary study of LGBTQ (lesbian, gay, bisexual, transgendered, queer) experiences. It introduces students to personal, cultural, and political aspects of queer life while examining social forces such as heteronormativity, the social construction of gender, and homophobia and their impact on queer lives. Prerequisites: WMST 201S or instructor approval.

**WMST 304. Chick Flicks. 3 Credits.**

This course will offer a pivotal focus on the under-representations and misrepresentations of young women of color, lesbians, working class women, women over forty, and women with disabilities in the majority of commercial films targeted at the "average" American woman consumer. Students will examine the cultural phenomenon of the chick flick and consider Hollywood and independent media responses to the new visibility and focus on women. Additionally, students will assess chick flicks as possible empowering models for girls and young women of all races and ethnicities and consider feminist responses to questions of post-feminism within these representations. Prerequisites: WMST 201S or instructor approval.

**WMST 368. Internship. 3-6 Credits.**

Course provides an opportunity to gain experience working in organizations and government agencies. Students' work should engage with women's issues at the local, regional, national, and/or global levels. Students must work for at least 50 hours per course credit. (Qualifies as a CAP experience.) Prerequisites: A minimum of one WMST course, junior standing and instructor approval.

**WMST 377. Extracurricular Studies. 3 Credits.**

An undergraduate seminar on feminist pedagogical issues and theory offered in conjunction with a practicum providing experience in the facilitation of small sections of the introductory women's studies course. Prerequisites: three semester hours in WMST or WMST crosslisted course and permission of the instructor.

**WMST 390T. Women and Technology Worldwide. 3 Credits.**

An exploration of women as designers and users of technology and of the impact of technology on women's lives across the world. Variations in women's experiences by race, class, and culture will be stressed, along with particular focus on global developments that shape the context of women's and men's lives. Prerequisites: Three semester hours in human behavior or history.

**WMST 395. Topics in Women's Studies. 1-3 Credits.**

A study of selected women's studies topics. These courses are usually interdisciplinary. All topics are described on the women's studies website and in material distributed to academic advisors Prerequisites: WMST 201S or instructor approval.

**WMST 396. Topics in Women's Studies. 1-3 Credits.**

A study of selected women's studies topics. These courses are usually interdisciplinary. All topics will be described on the women's studies website and in material distributed to academic advisors Prerequisites: WMST 201S and sophomore standing or permission of the instructor.

**WMST 400/500. U.S. Women's Activism. 3 Credits.**

This course historicizes U.S. women's social, political, and rhetorical activism over the last 200 years, tracing their entry into and shaping force upon public life. The course examines the development of women's activism in the nineteenth century, the twentieth century women's (or feminist) movement, and its current status, particularly in relation to postfeminism and a "third" wave. Prerequisite: WMST 201S.

**WMST 401W/501. Women: A Global Perspective. 3 Credits.**

An analysis of the global forces that impact women's lives throughout the world. Particular emphasis is placed on the status of women in the developing world, international institutions that protect women's rights, and efforts to promote gender equality worldwide. (This is a writing intensive course.) Prerequisites: WMST 201S and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**WMST 414/514. Motherhood: Texts and Images. 3 Credits.**

This course examines the role of the mother, the experience of mothering and the institution of motherhood through a number of disciplinary and theoretical lenses. It considers how motherhood functions to women's advantage or disadvantage, in professional and economic areas as well as the mother's ideological construction in public discourse, imagery, nonfiction, and film. Prerequisites: ENGL 211C or equivalent.

**WMST 460W/560. Feminist Theory. 3 Credits.**

A study of the renaissance in feminist thought since the 1960s through close readings of key documents and texts. The course covers a variety of feminist perspectives as expressed in both theory and practice. (This is a writing intensive course.) Prerequisites: WMST 201S or WMST 302W and a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C.

**WMST 470/570. Feminist Research Methods. 3 Credits.**

The course explores the ethics, practice, and multiple forms of conducting feminist research. Narrative research methods are practiced through hands-on oral history assignments. Throughout the course, the process of knowledge construction is interrogated from a feminist perspective. Prerequisites: WMST 460W.

**WMST 490. Capstone Course. 3 Credits.**

Seminar intended for women's studies majors in the final semester(s) of study, consisting of an individualized or group senior project, such as a research paper, an oral history, an internship, or a service learning project. Prerequisites: WMST 201S or WMST 302W and WMST 460W and six semester hours of additional WMST or cross-listed core courses.

**WMST 495/595. Topics in Women's Studies. 3 Credits.**

Advanced seminars on selected topics. The subject matter is usually interdisciplinary. These seminars are more fully described on the women's studies website and in material distributed each semester to academic advisors. Prerequisites: WMST 201S or instructor approval.

**WMST 496/596. Topics in Women's Studies. 3 Credits.**

Advanced seminars on selected topics. The subject matter is usually interdisciplinary. These seminars will be more fully described on the women's studies website and in material distributed each semester to academic advisors. Prerequisites: WMST 201S or permission of the instructor.

**WMST 497/597. Independent Study. 1-6 Credits.**

Independent study of an interdisciplinary women's studies topic, or a reading plus internship project to be selected under the direction of a women's studies faculty member. Conferences and papers as appropriate. Prerequisites: A minimum of one women's studies course and approval of instructor and chair of department.

**WMST 498/598. Independent Study. 1-6 Credits.**

Independent study of an interdisciplinary women's studies topic, or a reading plus internship project to be selected under the direction of a women's studies faculty member. Conferences and papers as appropriate. Prerequisites: A minimum of one women's studies course and approval of instructor and chair of department.

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